
City of Los Angeles Solid Waste Planning Background Studies Summary Report

**The City of Los Angeles
Department of Public Works
Bureau of Sanitation**



January 2006

CITY OF LOS ANGELES

**City of Los Angeles Solid Waste Planning
Background Studies Summary Report**

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Acronyms

BOS	Bureau of Sanitation
CEQA	California Environmental Quality Act
CiSWMPP	City of Los Angeles Solid Waste Management Policy Plan
CIWMB	California Integrated Waste Management Board
CLARTS	Central Los Angeles Recycling and Transfer Station
CoSWMP	County Solid Waste Management Plan
CT	Conversion Technology
DPW	Department of Public Works
EAD	Environmental Affairs Department
LARWQCB	Los Angeles Regional Water Quality Control Board
LEA	Local Enforcement Agency
LNG	liquefied natural gas
MRF	Material-Recovery Facility
MSW	municipal solid waste
MW	megawatt(s)
PAT	Process Action Team
RFB	Request for Bid
RFP	Request for Proposal
RFQ	Request for Quote
SAFE	solvents, automotive, flammables, and electronic
SRCD	Solid Resources Collection Division
SWMP	Solid Waste Management Plan
WTE	waste-to-energy

1.0 Introduction

The City of Los Angeles Department of Public Works (DPW) Bureau of Sanitation (BOS) continues to proactively plan and manage the City's solid resource program and infrastructure for the health and environmental welfare of its citizens. This Background Studies Summary Report is the preliminary step in this multi-phase effort to consolidate multiple planning and implementation documents and establish a current baseline of system operating conditions. This consolidation and update will facilitate future planning efforts and BOS decisions on the development of infrastructure required to continue to manage the City's solid resources.

The Background Studies Summary Report is divided into 10 sections. Section 1.0 discusses the background of solid waste management in Los Angeles since the early 1900s. Section 2.0 describes past studies conducted by the BOS between 1989 and 2005 and their relevance to future planning efforts. Sections 3.0 and 4.0 discuss existing waste generation, composition and solid waste management policies, respectively. Sections 5.0 and 6.0 summarize best management practices in place in the BOS system and alternative technologies being considered, respectively. Section 7.0 summarizes the baseline solid resources infrastructure plan, including facility development, facility relocations, household hazardous waste facilities, green waste processing facilities, transfer stations, and material recovery facilities. Section 8.0 summarizes a recently completed report by City Councilman Greig Smith, Twelfth District, entitled Recovery Energy, Natural Resource, and Economic Benefit from Waste for the City of Los Angeles (RENEW LA). Section 9.0 updates the discussion on responsible agencies involved in solid waste management. Section 10.0 lists the references used in preparing this report.

1.1 Background

In the early days, the City of Los Angeles had only two ways to dispose of solid waste: burn it or bury it. This was usually done in the backyards of homes or businesses. As the population grew and densities increased, these methods were no longer acceptable. In 1902, the City signed a contract with a private company to dispose of the organic (garbage) portion of the waste stream. In 1912, disposal services for noncombustible waste were instituted. Residents, however, were still allowed and expected to burn combustible waste. In 1943, as part of an effort to improve service, the City took responsibility for residential waste collection and disposal. Waste was collected twice a week. To facilitate recycling and disposal, residents were required to separate organic and yard waste from noncombustible waste. Commercial and industrial waste continued to be collected and disposed of by private collectors.

Backyard incineration of combustible waste continued until 1957 when increased concern over the deterioration of air quality in the Los Angeles Basin prompted the City to ban backyard waste burning. This significantly increased the amount of solid waste requiring collection and disposal.

Until the early 1960s, the City collected organic waste, yard waste, metals, and noncombustibles separately. During the 1961 mayoral election, waste separation was a campaign issue. Sam Yorty, who was elected mayor, promised that Los Angeles homeowners would no longer have to separate their waste. Given the convenience and lower cost of combined collection, City waste was collected without separation by 1964. However, this shift to combined collection minimized the recycling of materials and further increased the amount of solid waste requiring disposal.

In the 1950s, the City had easy access to local landfill sites bordering the City immediately to the north and in the Santa Monica mountain range to the west. In addition, gravel mining operations in the San Fernando Valley created deep pits that were used for landfills. However, by the late 1970s, landfills were rapidly filling up. Expanding urban development, environmental concerns, and development restrictions made it difficult to site and permit new landfills.

In 1979, the City Council instructed the BOS to evaluate alternatives to landfilling. The study resulted in a proposal for three waste-to-energy (WTE) projects known as LANCER (Los Angeles City Energy Recovery Projects I, II and III). As a result of public and political opposition, Mayor Tom Bradley asked the City Council to terminate the LANCER projects in June 1987, stating that WTE projects were not an option at that time for the City of Los Angeles and that other means of disposal should be evaluated.

The City initiated a pilot recycling program in 1985 that served 15,000 households in west Los Angeles. The program consisted of giving residents 14- to 16-gallon containers where they could put glass, plastic, paper, tin, and aluminum. In September 1987, the BOS published *Recycling 88*, which generated considerable comments from the public. The basic theme of this report was that more in-depth studies were needed.

In April 1989, a consultant team conducted a recycling study. Thereafter, a recycling plan was adopted in 1989 by the City (prior to AB939).

However, it was recognized that recycling could not be the sole answer to the City's growing solid waste streams. While recycling could reduce the volume of solid waste to be landfilled, it could not preclude the need for future disposal facilities. In mid-1988, the City authorized two additional studies. The first was a feasibility study for the long haul of solid waste to distant disposal sites. The second study involved the development of a 30-year Solid Waste Management Plan (SWMP) for disposing of the City's solid waste.

In September 1989, the California Legislature passed the California Integrated Waste Management Act of 1989 (AB 939). This law mandated that cities and counties achieve 25 percent waste diversion from landfills by 1995 and 50 percent diversion by 2000 or face a fine of up to \$10,000 per day. The law required extensive studies to quantify and characterize the City's waste stream and to establish programs that describe how the City will meet these diversion rates. To oversee permitting of solid waste and recycling facilities and administer related compliance programs, the California Integrated Waste Management Board (CIWMB) was instituted in 1990. To be in compliance, the City conducted a number of studies and a series of reports that were accepted by the CIWMB in late 1993.

Subsequently, the BOS conducted additional studies to update existing information and establish a path forward for managing the City's solid waste. Studies conducted by the BOS and its consultants between 1989 and 2005 and their relevance for future planning efforts are summarized in Section 2.0. Information useful for future solid waste planning efforts is presented in subsequent sections of this report.

2.0 Summary of Existing Baseline Solid Resources Documents (1989 – 2005)

2.1 Recycling Implementation Plan

2.1.1 Recycling Implementation Plan Final Report, April 1989

This report describes a recommended recycling program for household recyclable materials and yard debris, including collection and processing procedures and market development for the 720,000 single-family households and small multifamily units serviced by the BOS. The report also estimates costs and potential funding options; outreach, education, and promotional programs; and source reduction programs.

Although the recommended program described in the report has been modified over time, the program was successfully implemented and is in place. The BOS provides collection services to 720,000 households via 3 collection routes weekly: one for recyclables, another for yard waste, and a third for municipal solid waste (MSW). Data in the report have been superseded by more current data.

2.1.2 Recycling Implementation Plan Appendixes, April 1989

The appendixes present details of supplemental surveys and studies used to develop the Recycling Implementation Plan. These include a survey of local residential conditions; community outreach and recycling research; market analysis; evaluation of alternatives; survey of processing capacity; and a compendium of outreach, education, and promotional activities and projects.

As noted above, a modified version of the recommended program is in place, and most of the data contained in the 1989 Recycling Implementation Plan Report, Synopsis, and Appendixes are obsolete.

2.2 Long-Haul Study

2.2.1 Long-Haul Study Phase I Report, June 1989

The Phase I report is a short-term fatal-flaw analysis of transporting waste outside the region (greater than 50 miles) by rail, truck, and ship. The report includes a brief evaluation of technologies, costs, environmental impacts, facility needs, and operational and institutional issues for each of the three transport alternatives.

Transport by ship was rejected because of the lack of known disposal facilities amenable to ship transport as well as other political issues. Both rail and truck transport of waste to remote locations were considered feasible and evaluated in more detail in the Phase II report.

2.2.2 Long-Haul Study Phase II Report, August 1989 – Unpublished

The Phase II report describes the preferred alternatives for truck long haul and rail haul including operational requirements, transfer station requirements, implementation issues, and procurement methods. The report evaluates potential collection, loading, long-haul, and disposal costs for the two alternatives.

The report also evaluates the suitability of potential transfer station sites for each BOS collection district. Suitability analyses include regulatory considerations, technical considerations, and consistency with the General Plan Land Use Element and Zoning Code. The research found that the amount of land suitable and available for transfer stations, especially rail, was limited. The report was never published because of the sensitivity associated with the identification of specific sites that were in private ownership at that time.

The report is based on conditions that existed in 1989. Because of changed conditions, a reevaluation of potential facility sites is required.

2.3 Solid Waste Management Plan

2.3.1 Phase I Report, Existing Conditions, August 1989

This report summarizes conditions, as they existed in 1989, related to solid waste management in the City of Los Angeles. Information presented includes waste generation and composition; waste collection, transfer, and disposal including a summary of existing and planned transfer stations and waste disposal facilities; markets for recycled products; special waste handling including sludge, household hazardous waste, construction/demolition waste, tires, and asbestos; cost of services; roles and responsibilities of agencies for solid waste management including regional, county, and city agencies; and a timeline for permitting solid waste facilities.

Data in this report are obsolete, and much of the data have been updated through subsequent studies and data collection efforts. Most of the information relating to agencies responsible for solid waste management is pertinent and is summarized in Section 9.0.

2.3.2 Phase II Report, Component Alternatives, December 1989

The Phase II report evaluates alternatives for waste collection, diversion, recycling, disposal, special waste, and processing (composting, mechanical processing, biological processing, and thermal/chemical processing). Evaluation criteria include implementation, environmental constraints, and financial issues. Feasible component alternatives were analyzed in more detail in the Phase III report.

2.3.3 Phase III Report, Description of Solid Waste Management System Alternatives, December 1989

The Phase III report identifies 16 system alternatives. The systems were based on varying waste diversion rates from 20 percent to 70 percent and varying disposal options including all local landfills, all remote landfills, a combination of remote and local landfills, and waste-to-energy facilities within the basin and out of the basin. The report provides

information on implementation issues, facility requirements, trip generation, and costs for each of the system alternatives. Additional evaluation of the system alternatives was conducted during the preparation of an Environmental Impact Report (EIR), described below.

2.3.4 City of Los Angeles Solid Waste Management Plan Draft Environmental Impact Report, July 1990

This EIR describes the environmental impacts for each of the component and system alternatives presented in the Phase II and III reports and potential mitigation measures. Because specific sites for solid waste facilities were not identified, impacts are generic. This program-wide EIR provided the City with an umbrella document for establishing certain policies, as described below.

The report provides useful information for evaluating impacts and mitigation for future solid waste facility development. However, based on changed environmental conditions and the need for more detailed analysis, project-specific environmental documentation is required when specific sites are identified.

2.3.5 Phase IV Report, Solid Waste Management Policy Plan, April 1993

Preparation of the Phase IV report was delayed until after completion of the City of Los Angeles Source Reduction and Recycling Element, in accordance with the requirements of AB 939, which was adopted by the California Legislature during preparation of the Phase III report. The report describes five goals for future management of solid waste and establishes objectives and policies for achieving these goals.

Many of the policies and related programs identified in this plan have been implemented, and the City has met most of its interim objectives including obtaining a 50 percent diversion rate by 2000. Additional programs will be required to implement long-term objectives including a 70 percent diversion by 2020 and ensuring adequate long-term disposal or transformation capacity for waste that cannot be diverted.

These goals and objectives are summarized in Section 4.0. Data in the April 1993 report are obsolete. However, much of the data have been updated and documented in subsequent reports.

2.3.6 Phase V Report, Solid Waste Management Policy Plan Final Program Environmental Impact Report, October 1993

The Phase V report includes the preparation and certification of the Final Environmental Impact Report (FEIR) (State Clearinghouse #89022213) in accordance with all applicable laws, and review and approval of the Phase IV City of Los Angeles Solid Waste Management Policy Plan (CiSWMPP)/ The Phase IV documents were reviewed by the Board of Public Works, the Solid Waste Citizens Advisory Group, the Solid Waste Steering Committee and the Environment Affairs Department. They were also made available for public review and a public work shop was held on June 7, 1993. The Report includes a description of the CiSWMPP, existing conditions update, potential environmental impacts of the proposed project and mitigation measures, response to comments on the Draft EIR, findings and statement of overriding considerations, and a mitigation monitoring plan.

The CiSWMPP does not recommend facility sites, but rather identifies the types of facilities that will be needed. For this reason, the Program EIR does not analyze impacts that are unique to the specific sites. Thus, it cannot be specific about many of the impacts associated with individual facilities. Each proposed facility will require separate environmental evaluation. This could range from exemptions to negative declarations to focused or full EIRs depending upon the facility under consideration and its potential for environmental effects.

2.4 AB 939 Source Reduction and Recycling Element

2.4.1 Target Secondary Material Markets and Small Business Economic Development, February 1992

This report describes market development for materials difficult to recycle with complementary actions that would spur positive small business economic development activities within the City. Information contained in this report was incorporated into other reports, described below.

2.4.2 Bureau of Sanitation Source Reduction and Recycling Element for AB 939, May 1992

This report describes the BOS Source Reduction and Recycling Program for waste collected by the BOS in conformance with the requirements of AB 939. The information presented in this report was incorporated into other reports, described below.

2.4.3 Volume I: Executive Summary, April 1993

This report summarizes data, policies, programs, and other information presented in Volumes II, III, and IV, described below.

2.4.4 Volume II: Solid Waste Generation Study, April 1993

The report presents waste disposal, diversion, and composition data for residential, commercial, and industrial sectors as well as related information for targeted generators such as restaurants, food processors, hotels, grocers, and large office buildings. Data contained in this report are obsolete because of the successful implementation of many waste diversion programs during the past decade. However, some of these data have been updated through the Waste Characterization and Quantification Study conducted in 2002, described later in this section.

2.4.5 Volume III: Compliance Document, Source Reduction and Recycling Element, April 1993

The report was written to comply with the requirements of AB 939 for demonstrating how the City would achieve a 25 percent diversion rate by 1995 and a 50 percent diversion rate by 2000. The report includes goals and objectives; existing solid waste generation and composition; programs for source reduction, recycling, composting, special waste, and education and public information; disposal facility capacity; funding; and program integration. Most of the programs were implemented, and the City exceeded the 1995 and

2000 diversion goals. As described later in this section, a report was prepared in 2001 that updates this report and describes recycling programs that were in place in 2000 and potential new programs for City departments.

2.4.6 Volume IV: Specific Strategies for Targeted Generators, Target Materials, and City Departments, April 1993

Volume IV presents strategies for targeted waste generators such as hotels, restaurants, and hospitals; targeted materials such as construction and demolition debris, green waste, and direct mail; and government departments. These strategies were developed based on a survey of model programs throughout the United States and Canada in 1991 and meetings with generator working groups and associations. Although this report has not been formally updated, the strategies are, for the most part, still valid.

2.5 Other Recent Reports

2.5.1 Best Practices Report, 2000

The report was prepared by a Process Action Team Committee charged with surveying the solid resources collection industry for innovative “best practices” that might help the City improve its operating procedures and bottom line costs. Information was obtained via questionnaires, interviews with facility managers, and observations during site visits to seven cities in the United States. Based on this information, recommendations were made to improve procedures and reduce costs. Relevant recommendations are summarized in Section 5.0.

2.5.2 Solid Resources Infrastructure Strategy Facilities Plan, November 2000

The report describes strategies for obtaining supporting infrastructure facilities such as transfer stations and material recovery facilities critical to providing cost-effective solid waste management services to the 740,000 households serviced by the BOS as of 2000. Strategies that are still relevant are summarized in Section 7.0, as well as the status of implementation.

2.5.3 City of Los Angeles Year 2000 AB939 Report, August 2001

The report is based on a comprehensive survey conducted in 2001 to document year 2000 waste disposal, diversion, and generation quantities and determine year 2000 diversion rate. Based on this study, in 2000, the City diverted 60 percent of its waste. Existing City department programs and diversion quantities are also described. This report presents the most current data regarding citywide diversion and disposal. Data presented in this report are summarized in Section 3.0.

2.5.4 City of Los Angeles Waste Characterization and Quantification Study Year 2000, July 2002

The report presents the composition of waste from five waste sectors within the City: single-family residential, multifamily residential, construction and demolition waste, green

waste, and overall commercial waste. The report provides the most recent waste composition data and is summarized in Section 3.0.

2.5.5 Evaluation of Alternative Solid Waste Processing Technologies, July 2005

This report presents an extensive evaluation of alternative solid waste processing technologies including thermal, physical, and biological processing technologies. The evaluation includes siting (or environmental) feasibility, technical feasibility, and economic feasibility. After an extensive screening process, the report recommends that the City pursue the development of processing facilities for post-source separated municipal solid waste using thermal technology.

Information contained in this report is current and relevant with respect to the City's solid waste infrastructure plans. This report is summarized in Section 6.0.

In June 2005, Los Angeles City Councilman Greig Smith, Twelfth District, issued a comprehensive report entitled *Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles (RENEW LA)*. The report presents a plan for the City of Los Angeles for the 20-year period between 2005 and 2025. The primary goal of this plan, as defined in the RENEW LA report, is "to reduce, reuse, recycle, or conserve the resources now going to disposal to achieve an overall diversion level of 90 percent or more by 2025 and to dispose of only inert residual."

Although the plan has not been officially adopted by the City, key elements are currently under consideration by the Mayor and City Council with input from BOS. A summary of some of the major programs recommended in this plan is provided in Section 8.0

2.6 Summary

The City has conducted numerous studies relating to the management of the City's solid waste. As noted above, the City has implemented many of the recommended programs, as proposed or in a modified version, and has achieved most of its interim objectives, especially with respect to waste diversion. While data in the earlier reports (prior to 2000) provide a good historical perspective with respect to the success of City programs, data are outdated and have been superseded through subsequent studies conducted since 2000.

The following sections summarize recent data and current strategies relevant to future planning efforts required to achieve longer-term objectives identified in the City of Los Angeles Solid Waste Management Policy Plan. These longer-term objectives include increasing the City's waste diversion rate to 70 percent by 2020 and providing adequate long-term processing and disposal facilities for waste that cannot be diverted.

3.0 City of Los Angeles Solid Waste Operations

This section summarizes current City of Los Angeles solid waste operations. The summary includes waste generation and composition data based on studies conducted for the year 2000, and existing (1995) solid waste facilities, such as transfer stations, disposal facilities, material recovery facilities, and composting facilities.

3.1 Existing Waste Generation and Composition

This section summarizes the citywide waste generation, disposal, and composition by sector. This information is based on waste disposal and diversion data, from both the private and public sectors, described in the City of Los Angeles Year 2000 AB 939 Annual Report and the City of Los Angeles Waste Characterization and Quantification Study, Year 2002.

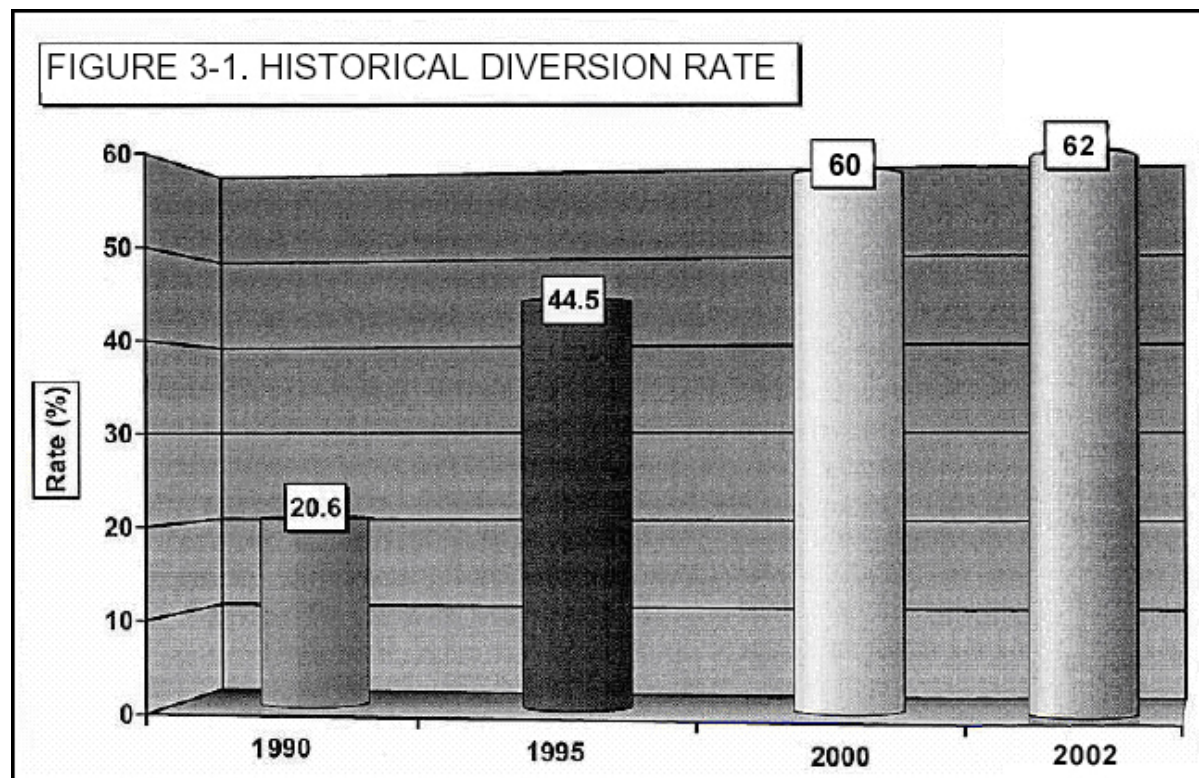
3.1.1 Citywide Waste Generation

Waste disposal: The total quantity of waste disposed of by the City of Los Angeles in 2000 was reported as 3,859,622 tons. The source of the disposal data, the Disposal Reporting System, maintained by the CIWMB, includes records of disposed and transformed wastes from facilities reporting as receiving tonnage generated from within the City.

Waste diversion: The total quantity of waste diverted by the City of Los Angeles in 2000 was 5,719,354 tons. Diversion data were compiled from a number of sources. The data were compiled by sector (residential, commercial, and industrial), material type, and program type (recycling, composting, and source reduction).

Waste generation and diversion rate: Waste generation is defined as the sum of the quantity and types of waste disposed of and diverted. The results of the diversion study indicated a total of 5.72 million tons of materials were diverted in the City in 2000. The data from the Disposal Reporting System indicated that 3.86 million tons of waste were disposed of from the City. Based on these numbers, the City's total generation for 2000 was 9.58 million tons. Using the calculation of diversion divided by generation equals the diversion rate, the City's 2000 diversion rate was 60 percent. (The latest CIWMB recycling rates show a 62 percent diversion for 2002.)

In 1990, the waste diversion rate was 20.6 percent. In 1995, the waste diversion rate had jumped to 44.5 percent and, as noted, reached 60 percent in 2000, exceeding the 50 percent diversion goal (Figure 3-1). The City's diversion rate is attributed to aggressive efforts in the public and private sectors. City departments contributed 1,216,035 tons of diversion. The major material categories for the reported diversion by City departments are organics and paper products. Landfills diverted more than 418,000 tons of materials from the waste stream. The majority of these materials included inert material and green waste. Materials diverted by processors included paper products, metals, organics, and inert solids and totaled 3,181,190 tons.



Source: AB 939 Annual Report, 2000

*All sectors

TABLE 3-1
Waste Generation, Diversion and Disposal by Sector

Sector	Total Waste Generated	Total Diverted	Total Disposal**	Diversion Rate
Single Family	1,483,363	619,723	863,640	41.8%
Multifamily	551,650	N/A*	551,650	N/A
Construction/Demolition	1,937,232	1,468,335	468,897	75.8%
Green Waste	75,034	43,841	31,193	58.4%
Commercial/Industrial	5,216,686	3,587,455	1,629,231	68.8%
Others	315,011		315,011	
Totals	9,578,976	5,719,354	3,859,622	59.7%***

* Multifamily recycling was not measured outside of the Commercial wastestream, but field work suggested that little recycling was taking place.

** Total Disposal number includes disposal at inert facilities. This material is now not considered disposal. About 100,000 tons of C&D was disposed.

*** Transformation will bring the total percentage to 60%.

3.1.2 Waste Disposal by Sector

The City of Los Angeles Waste Characterization & Quantification Study, Year 2000, quantified waste disposal for five sectors:

- **Single-family residential** waste,
- **Multifamily residential** waste,
- **Construction/demolition** waste, which is disposed by contractors and “do-it-yourself” homeowners who construct and/or demolish buildings,
- **Landscaping** waste which is disposed by professionals and “do-it-yourself” residents who landscape or do other yard care activities, and
- **Commercial** waste, which includes waste from commercial, industrial, and institutional sources.

A summary of the findings of this study is summarized in Table 3-1.

Single-Family Waste

The total quantity of single-family waste disposed of was estimated by the BOS to be 863,640 tons (City of Los Angeles Waste Characterization and Quantification Study, Year 2002). This waste was collected from approximately 740,000 households, for an average of about 1.2 tons per household per year.

Multi-family Residential Waste

Multifamily waste was measured at the point of generation for selected apartment complexes. An average figure was derived for the volume of waste disposed of per apartment unit per year. That figure was multiplied by the average measured density of multifamily waste (110 pounds per cubic yard) and by the estimated number of multifamily units in the City (593,000 units) to produce the citywide disposal estimate of 551,650 tons per year.

Construction and Demolition Waste

The total quantity of construction and demolition waste disposed of at inert disposal facilities is estimated at 468,897 tons. Of this waste, 364,703 tons were disposed of at the four dedicated, inert waste disposal sites serving Los Angeles: Azusa Land Reclamation Landfill, Nu-Way Live Oak Landfill, Peck Road Gravel Pit, and Reliance Pit No. 2, as reported by the CIWMB. The remaining 104,194 tons were disposed of at municipal solid waste landfills, the majority at Bradley and Calabasas Landfills. These totals represent waste disposed of by the construction and demolition sector, and not construction and demolition materials contained in residential or commercial MSW loads.

Green Waste

Approximately 31,193 tons of green waste were disposed of by landscaping professionals and do-it-yourself landscapers in 2000. This estimate does not include yard waste disposed of in commercially hauled business or residence trash or the 435,968 tons of source-separate yard trimmings collected from residents by the BOS and converted into mulch.

Commercial Waste

Commercial waste was measured at the point of generation. The total amount of waste disposed of by the Los Angeles commercial sector in 2000 was estimated at 1,629,231 tons. This estimate refers to waste collected prior to correction for waste recovered or recycled after passing through a material recovery facility (MRF). There are approximately 1,554,000 employees who work within the City of Los Angeles limits. Average waste disposal across all industry groups is about 1.05 tons per employee per year.

3.1.3 Waste Composition by Sector

The section estimates the amount of waste in each sector, based on data presented in the City of Los Angeles Waste Characterization and Quantification Study, Year 2002. Composition, expressed in terms of percentages by weight, is described in detail in Table 3-2.

Single-Family Residential Waste

Composition results for single-family residential waste were based on 80 disposal-site samples. Other organic and paper are the most prevalent material classes in single-family residential waste. Food, leaves and grass, newspaper, and prunings and trimmings are generally considered to be recyclable from residential sources. Together, these make up about 39 percent of Los Angeles' single-family residential waste, or about 339,751 tons.

Multi-family Residential Waste

An overview of multifamily residential waste indicates the materials most prevalent in multifamily waste include food, newspaper, uncoated corrugated cardboard, magazines and catalogs, clear glass bottles and containers, and leaves and grass. Together, these materials make up about 48 percent of the multifamily waste stream by weight, and represent 267,507 tons of solid waste disposed of annually. Some multifamily waste passes through recovery facilities prior to final disposal, where some of the material is recovered.

Construction and Demolition Waste

Composition results for construction and demolition debris were derived from 160 disposal-site samples. Concrete, rock, soil and fines, asphalt paving, lumber, and asphalt roofing are among the most prevalent materials in construction and demolition waste. Depending on local programs, market conditions, and material purity, most, if not all, of these materials are recoverable. Los Angeles' construction and demolition waste totaled more than 450,000 tons.

Green Waste

Composition results for green waste were derived from 83 disposal-site samples. Organic materials make up the majority of landscaping waste. Prunings and trimmings, leaves and grass, and branches and stumps are among the most prevalent materials in green waste. Depending on local programs, market conditions, and material purity, most, if not all, of these materials are recoverable. Green wastes totaled approximately 31,193 tons.

TABLE 3-2
Waste Composition by Sector

	Composition of Single-Family Residential Waste		Composition of Multifamily Residential Waste		Composition of Construction and Demolition Waste		Composition of Green Waste		Composition of Overall Waste	
	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons
Paper	22.7	196,175	32.3	178,255	0.3	1,203	4.5	1,419	32.1	523,581
Uncoated Corrugated Cardboard	2.3	20,102	3.2	17,711	0.2	767	0.6	175	5.9	96,550
Paper Bags	0.9	7,585	1.1	6,341	0	25	0	1	0.6	10,489
Newspaper	4.4	37,989	9.9	54,812	0	83	3.8	1,180	2.8	46,216
White Ledger Paper	0.7	5,904	1.2	6,686	0	24	0	1	3.6	59,145
Colored Ledger Paper	0	360	0.1	516	0	6	0	0	0.2	2,589
Computer Paper	0	61	0.1	470	0	0	0	0	0.5	7,877
Other Office Paper	0.5	4,516	1.1	6,258	0	7	0	0	2.7	43,441
Magazines and Catalogs	1.3	11,314	3	16,531	0	19	0	11	1.6	26,409
Phone Books and Directories	0.2	2,057	0.3	1,530	0	5	0	0	0.1	2,173
Other Miscellaneous Paper	4.9	42,110	5.1	28,111	0	64	0	7	3.9	63,101
Remainder/Composite Paper	7.4	64,178	7.1	39,289	0	203	0.1	44	10.2	165,591
Glass	2.1	18,330	5.5	30,426	0.5	2,129	0	5	2	33,302
Clear Glass Bottles & Containers	1.1	9,282	2.8	15,469	0	11	0	4	0.9	13,911
Green Glass Bottles & Containers	0.4	3,605	1.4	7,687	0	2	0	0	0.5	8,509
Brown Glass Bottles & Containers	0.4	3,357	0.8	4,306	0	74	0	0	0.2	3,240
Other Colored Glass Bottles& Containers	0.1	486	0	108	0	0	0	0	0	26
Flat Glass	0	60	0	131	0.4	1,978	0	0	0.2	3,557
Remainder/Composite Glass	0.2	1,541	0.5	2,724	0	65	0	0	0.2	4,060
Metal	4.8	41,336	5.7	31,561	1.7	8,088	1.4	448	3.9	62,941
Tin/Steel Cans	1.4	11,901	1.1	5,881	0	36	0	2	1.3	20,569
Major Appliances	0	27	0	204	0.1	293	0.5	141	0.1	1,821

TABLE 3-2
Waste Composition by Sector

	Composition of Single-Family Residential Waste		Composition of Multifamily Residential Waste		Composition of Construction and Demolition Waste		Composition of Green Waste		Composition of Overall Waste	
	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons
Other Ferrous Metal	1.1	9,377	0.5	2,497	1.3	5,864	0.8	246	1.1	17,677
Aluminum Cans	0.2	1,995	0.4	2,029	0	7	0	2	0.3	4,332
Other Non-Ferrous Metal	0.2	1,872	0.3	1,803	0	177	0	13	0.2	2,952
Remainder/Composite Metal	1.4	12,317	1.7	9,478	0.4	1,711	0.1	45	0.8	13,490
Electronics	0.4	3,847	1.8	9,669	0	0	0	0	0.1	2,100
Plastic	10	86,601	9.7	53,294	0.2	1,062	1.4	130	11.7	191,273
HDPE Containers	0.7	5,798	1.2	6,486	0	31	0.1	44	0.7	10,851
PETE Containers	0.6	5,293	0.9	5,145	0	10	0	3	0.5	8,306
Miscellaneous Plastic Containers	0.6	4,919	0.8	4,140	0	10	0	1	0.6	9,307
Film Plastic	4.5	38,603	3.5	19,380	0.1	274	0.1	39	5.5	89,537
Durable Plastic Items	1.1	9,559	1.3	7,389	0.1	548	0.5	141	1.1	18,627
Remainder/Composite Plastic	2.6	22,429	1.9	10,755	0	188	0.6	202	3.4	54,645
Other Organic	46.7	403,737	40.7	224,505	1.9	8,892	65.2	20,337	41.7	678,601
Food	26.9	232,500	27	148,952	0	31	0	2	29.2	475,477
Leaves & Grass	5.2	45,041	2.5	14,032	0.2	1,092	19.9	6,208	1.9	31,158
Prunings & Trimmings	2.8	24,221	0.5	3,023	0.5	2,251	33.7	10,499	0.7	10,948
Branches & Stumps	0.4	3,623	0.1	661	0.4	1,727	11.3	3,523	0	0
Agricultural Crop Residues	0	0	0	0	0	0	0	0	0	1
Manures	0	0	0	0	0	0	0	0	0	0
Textiles	2.8	23,751	2.5	13,959	0	42	0.1	20	4.6	74,413
Remainder/Composite Organic	8.6	74,601	8	43,879	0.8	3,785	0.3	85	5.3	86,604

TABLE 3-2
Waste Composition by Sector

	Composition of Single-Family Residential Waste		Composition of Multifamily Residential Waste		Composition of Construction and Demolition Waste		Composition of Green Waste		Composition of Overall Waste	
	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons
Construction & Demolition	9.4	81,188	2.2	11,904	95.3	447,078	26.4	8,249	7.3	119,004
Concrete	1.1	9,873	0.1	772	32.5	152,543	6.7	2,085	1	16,793
Asphalt Paving	0.1	452	0	0	11.8	55,223	0.1	43	0.1	2,191
Asphalt Roofing	0.2	1,360	0	0	5.6	26,424	0	15	0	189
Lumber	3.5	30,294	0.7	3,859	6.9	32,278	8.8	2,734	4.3	69,819
Gypsum Board	0.6	5,414	0.1	350	2.2	10,397	0.4	114	0	764
Rock, Soil & Fines	2.7	23,149	0.2	1,190	30.8	144,588	5.4	1,692	0.3	4,271
Remainder/Composite C&D	1.2	10,645	1	5,733	5.5	25,626	5	1,565	1.5	24,978
Hazardous Waste	0.2	1,416	0.4	2,019	0	11	0	5	0.5	7,731
Paint	0	2	0.1	456	0	0	0	0	0.1	1,417
Vehicle & Equipment Fluids	0	0	0	121	0	0	0	0	0	16
Used Oils	0.1	436	0.2	1,005	0	0	0	5	0	208
Batteries	0.1	523	0.1	316	0	8	0	0	0	773
Remainder/Composite HW	0.1	455	0		0	3	0	0	0.3	5,317
Special Waste	0.5	4,428	2.4	13,032	0.1	376	0.9	281	0.3	5,546
Ash	0.1	708	0	126	0	0	0	0	0.1	1,063
Sewage Solids	0	0	0	0	0	0	0	0	0	0
Industrial Sludge	0	0	0	0	0	0	0	0	0	0
Treated Medical Waste	0	0	0	15	0	0	0	0	0	230
Bulky Items	0.3	2,445	2.3	12,687	0.1	345	0.8	259	0.1	2,377
Tires	0	16	0	0	0	18	0	0	0	315
Remainder/Composite Special Waste	0.1	1,259	0	204	0	13	0.1	22	0.1	1,561

TABLE 3-2
Waste Composition by Sector

	Composition of Single-Family Residential Waste		Composition of Multifamily Residential Waste		Composition of Construction and Demolition Waste		Composition of Green Waste		Composition of Overall Waste	
	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons	Est. %	Est. Tons
Mixed Residue	3.5	30,430	1.2	6,655	0	22	0.1	18	0.4	7,251
Totals	100	863,640	100	551,650	100	468,897	100	31,193	100	1,629,231
Sample Count	80		89		160		83		900	

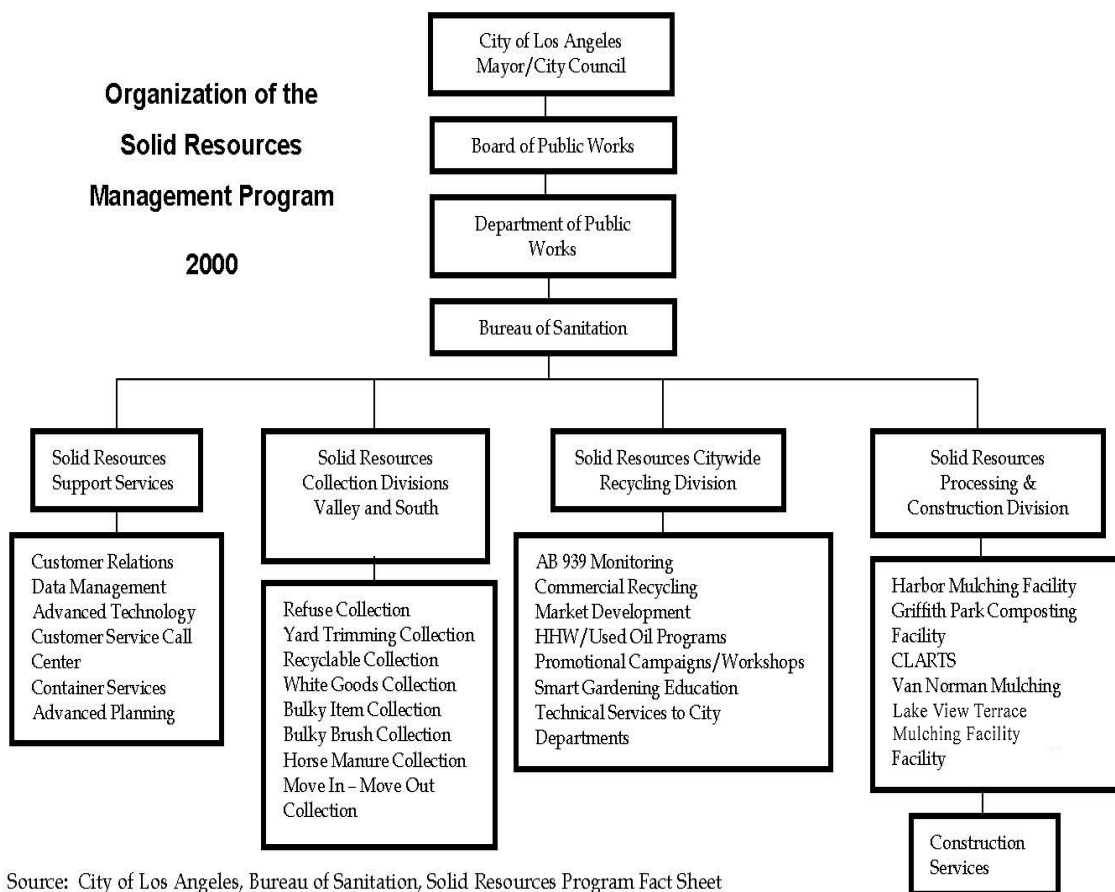
Commercial Waste

Overall, commercial waste composition estimates were developed by aggregating data from industry groups. Materials present in large amounts and assumed to be relatively recoverable include food, uncoated corrugated cardboard, film plastic, lumber, and white ledger paper. Together, these materials make up approximately 48.5 percent of the commercial waste stream by weight, and they represent approximately 790,000 tons of solid waste disposed of by Los Angeles' commercial sector.

3.1.4 City-Collected Waste

Organization of the Solid Resources Management Program

The City of Los Angeles Solid Resources Management Program consists of five divisions as shown in the following organization chart. The residential collection program is managed by the Valley and South Solid Resources Collection Divisions. The commercial program and other citywide recycling services are managed by the Solid Resources Citywide Recycling Division. The Solid Resources Processing and Construction Division focuses on maintenance of closed landfills and operation of processing facilities. The Solid Resources Support Services Division focuses on resources management planning and infrastructure development.



Residential Collection

The BOS collects waste from approximately 740,000 households and is also responsible for collecting waste from the City Hall complex, some public buildings, parks, and fire stations. The City's waste collection activities are organized into five waste collection districts: South Central/Harbor, North Central, Western, West Valley, and East Valley. While the Harbor District is a distinct entity, for operational purposes, it is considered an extension of the South Central District. A waste collection yard where vehicles are stored and maintained is located in each district. The locations of the collection districts and tons per day of refuse, green waste, and recyclables collected per day for each district are shown in Figure 3-2.

3.2 Existing Solid Waste Facilities

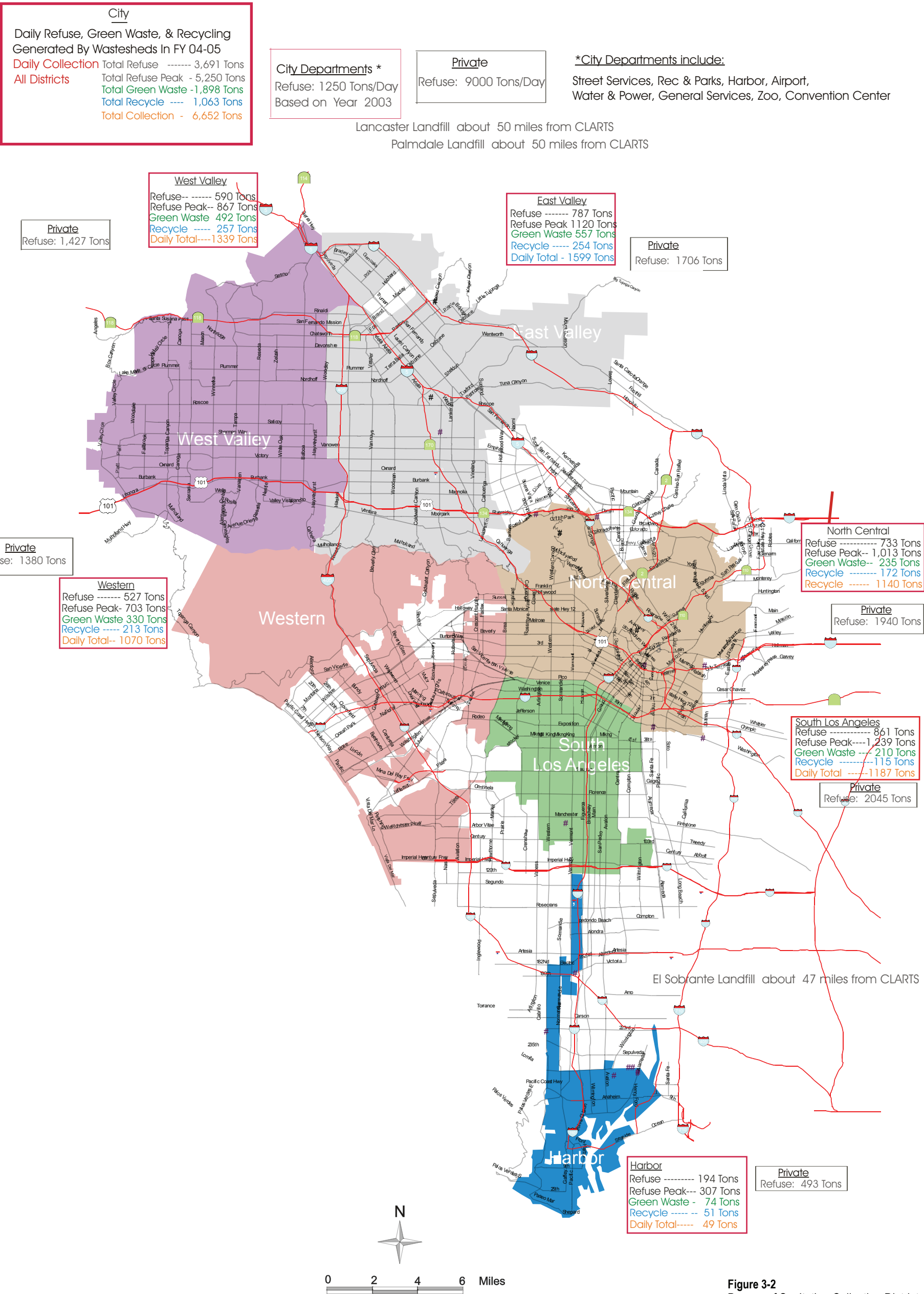
This section provides a current list of solid waste facilities in the County of Los Angeles. These include the following types of facilities:

- Transfer Stations (Tables 3-3a and 3-3b)
- Class III Landfills (Table 3-4)
- Waste-to-Energy Facilities (Table 3-5)
- Material Recovery Facilities (Table 3-6)
- Composting Facilities (Table 3-7)
- Disposal Facilities used by City of Los Angeles Private Haulers (Table 3-8)

The locations of these facilities are shown in Figures 3-3 through 3-6.

This information was obtained from databases maintained by the BOS, CIWMB, Los Angeles County Sanitation Districts, and California Environmental Protection Agency, as well as information collected from other sources.

TOTAL DAILY WASTE GENERATION

Figure 3-2
Bureau of Sanitation Collection Districts
and Tonnage Data

Source: City of Los Angeles Department of Public Works
Bureau of Sanitation, Solid Resources Group, August 2005

TABLE 3-3(a)
Existing Transfer Stations
Transfer Stations – Over 100 Tons/Day (LA County)

Facility Name	Address	Owner/Operator	Lead Enforcement Agency	Permitted Capacity	Waste Types Accepted ^a
American Waste Transfer Station	1449 W. Rosecrans Avenue, Gardena, CA 90249	Republic Services of California 310/527-6980	County of Los Angeles Department of Health Services 626/430-5541	4,032 tons/day	• Agricultural • Construction/Demolition • Green Materials • Industrial • Inert • Manure • Metals • Mixed Municipal
Bel-Art Waste Transfer Station	2501 E. 68 th Street, Long Beach, CA 90805	Consolidated Disposal Services L.L.C., 562/663-3429	County of Los Angeles Department of Health Services 626/430-5541	1,600 tons/day	• Construction/Demolition • Green Materials • Mixed Municipal • Inert
Browning Ferris, Ind. Recycling and Transfer Station	2509 W. Rosecrans Avenue, Compton, CA 90059	BFI Waste Systems of N.A. Inc. 310/327-8461	County of Los Angeles Department of Health Services 626/430-5541	4,000 tons/day	• Construction/Demolition • Green Materials • Industrial • Mixed Municipal
Carson Transfer Station and MRF	321 West Francisco Street Carson, CA 90745	USA Waste of CA, Inc. 310/217-6300	County of Los Angeles Department of Health Services 626/430-5541	5,300 tons/day	• Construction/demolition • Industrial • Mixed municipal
City of Culver City	9255 West Jefferson Blvd Culver City, CA 90232	City of Culver City – San. Div. of P.W.D. 310/253-6405	County of Los Angeles Department of Health Services 626/430-5541	500 tons/day	• Construction/Demolition • Green Materials • Industrial • Inert • Mixed Municipal • Tires
City of Inglewood	222 West Beach Ave Inglewood, CA 90302	City of Inglewood 213/412-5510	County of Los Angeles Department of Health Services 626/430-5541	359 cubic yards	• Green Materials • Mixed Municipal

TABLE 3-3(a)
Existing Transfer Stations
Transfer Stations – Over 100 Tons/Day (LA County)

Facility Name	Address	Owner/Operator	Lead Enforcement Agency	Permitted Capacity	Waste Types Accepted ^a
City of Santa Monica	2500 Michigan Ave Santa Monica, CA 90404	City of Santa Monica 310/458-8221	County of Los Angeles Department of Health Services 626/430-5541	600 tons/day	• Industrial • Mixed Municipal
Coastal Material Recovery	357 West Compton Blvd. Gardena, CA 90248	Phoenix Waste and Recycling Services 562/699-7776	County of Los Angeles Department of Health Services 626/430-5541	500 tons/day	• Construction/Demolition • Inert • Mixed Municipal • Tires • Wood Waste
Downey Area Recycling and Transfer Station (DARTS)	9770 Washburn Road Downey, CA 90241	LA County San. Dist. & Downey Area R & T 562/699-7411	County of Los Angeles Department of Health Services 626/430-5541	5,000 tons/day	• Construction/Demolition • Green Materials • Industrial • Mixed Municipal
East Los Angeles Recycling and Transfer (ELARTS)	1512 N. Bonnie Beach Pl. City Terrace, CA 90063	Consolidated Disposal Services 562/663-3400	County of Los Angeles Department of Health Services 626/430-5541	700 tons/day	• Construction/Demolition • Mixed Municipal
Norwalk	13780 East Imperial Highway Santa Fe Springs, CA 90670	Ecology Auto Parts, Inc. 562/921-9974	County of Los Angeles Department of Health Services 626/430-5541	99 cubic yards	• Green Materials
Paramount Resource	7230 Petterson Lane Paramount, CA 90723	Paramount Resource Recycling, Inc. 562/602-6505	County of Los Angeles Department of Health Services 626/430-5541	2,400 tons/day	• Construction/Demolition • Industrial • Mixed Municipal
Southern California Disposal Co.	1908 Frank Street Santa Monica, CA 90404	Southern Cal. Disposal Co. R. & T.S. 310/828-6444	County of Los Angeles Department of Health Services 626/430-5541	2,112 tons/day	• Green Materials • Industrial • Mixed Municipal
South Gate L.A. County San District	9530 South Garfield Ave South Gate, CA 90280	County of LA San. Dist. 562/699-7411	County of Los Angeles Department of Health Services 626/430-5541	2,260 tons/day	• Construction/Demolition • Industrial • Inert • Mixed Municipal

TABLE 3-3(a)
Existing Transfer Stations
Transfer Stations – Over 100 Tons/Day (LA County)

Facility Name	Address	Owner/Operator	Lead Enforcement Agency	Permitted Capacity	Waste Types Accepted ^a
South Gate Waste Management TS	4489 Ardine Street South Gate, CA 90280	H.B.J.J. Inc. Subsidiary of USA Waste 323/560-8488	County of Los Angeles Department of Health Services 626/430-5541	2,600 tons/day	• Construction/Demolition • Green Materials • Industrial • Inert • Mixed Municipal

Notes:

a Specific types of waste that can and cannot be accepted are included in the audit packages for most disposal facilities.

TABLE 3-3(b)
Existing Transfer Stations
Transfer Stations – Over 100 Tons/Day (LA City)

Facility Name	Address	Owner/Operator	Lead Enforcement Agency	Permitted Capacity	Waste Types Accepted ^a
Van Nuys St. MDY	15145 Oxnard St Van Nuys, CA 91411	City of Los Angeles Bur. of Street Maint. 213/485-5630	City of Los Angeles Environmental Affairs Dept. 213/978-0864	500 cubic yards	- Construction/Demolition - Mixed Municipal - Tires
East Street, MDY	452 San Fernando Road, Los Angeles, CA 90065	City of Los Angeles Bur. of Street Maint. 213/485-5630	City of Los Angeles Environmental Affairs Dept. 213/978-0864	1,020 cubic yards	- Construction/Demolition - Mixed Municipal - Tires
Granada Hills, MDY	10210 Etiwanda Ave Northridge, CA 91325	City of Los Angeles Bur. of Street Maint. 213/485-5630	City of Los Angeles Environmental Affairs Dept. 213/978-0864	1,020 cubic yards	- Construction/Demolition - Mixed Municipal - Tires
Southwest St. MDY	5860 South Wilton Place Los Angeles, Ca 90047	City of Los Angeles Bur. of Street Maint. 213/485-5630	City of Los Angeles Environmental Affairs Dept. 213/978-0864	1,020 cubic yards	- Construction/Demolition - Mixed municipal - Tires
Falcon Refuse Center	3031 East “i” Street Wilmington, CA 90744	City of Los Angeles Bureau of Sanitation 213/763-1837	City of Los Angeles Environmental Affairs Dept. 213/978-0864	3,500 tons/day	- Construction/Demolition - Industrial - Mixed Municipal
Central L.A. Recycling Center and Transfer Station	2201 Washington Blvd Los Angeles, CA 90034	City of Los Angeles Bureau of Sanitation 213/763-1837	City of Los Angeles Environmental Affairs Dept. 213/978-0864	4,025 tons/day	Mixed Municipal
Mission Road Transfer Station	840 South Mission Road Los Angeles, CA 90023	Waste Management Inc – Bradley LF & Miss 818/767-6180	City of Los Angeles Environmental Affairs Dept. 213/978-0864	500,000 tons/year	- Construction/Demolition - Green Materials - Mixed Municipal
Community Recycling (MRF)	9147 De Garmo Ave Sun Valley, CA 91352	Community Recycling and Resource Recovery 818/767-6000	City of Los Angeles Environmental Affairs Dept. 213/978-0864	1,700 tons/day	- Construction/Demolition - Industrial - Mixed Municipal
Angelus Western Paper Fibers (MRF)	2474 Porter Street Los Angeles, CA 90021	Angeles Western Paper Fiber, Inc. 213/623-9221	City of Los Angeles Environmental Affairs Dept. 213/978-0864	700 tons/day	Mixed Municipal

Notes:

a Specific types of waste that can and cannot be accepted are included in the audit packages for most disposal facilities

TABLE 3-4
Class III Landfills

Landfill and Waste to Energy Facilities	Address	Lead Enforcement Agency	Operator/ Owner	Regulatory Status	Permitted Capacity Tons/Day	Waste Types Accepted^a
Azusa Landfill	1211 West Gladstone Street, Azusa, CA 91720	County of Los Angeles Department of Health Services 626/430-5541	Azusa Land Reclamation Co. Inc.	Permitted	6,500	• Asbestos • Asbestos, friable • Inert • Tires
Antelope Valley Landfill	1200 West City Ranch Road Palmdale, CA 93550	County of Los Angeles Department of Health Services 626/430-5541	Arklin Brothers Enterprises, USA Waste 661/223-3400	Permitted	1,400	• Construction/Demolition • Mixed Municipal
Bradley Landfill	9227 Tujunga Avenue Sun Valley, CA 91352	City of Los Angeles Environmental Affairs Department 213/580-1070	Waste Management, Inc. 818/768-6180	Permitted	10,000	• Construction/Demolition • Contaminated Soil • Mixed Municipal
Calabasas Landfill	5300 Lost Hills Road Agoura, CA 91301	County of Los Angeles Department of Health Services 626/430-5541	County of Los Angeles Sanitation District 562/699-7411	Permitted	3,500	• Construction/Demolition • Green Materials • Industrial • Tires • Mixed Municipal
Chiquita Canyon	29201 Henry Mayo Drive Valencia, CA 91384	County of Los Angeles Department of Health Services 626/430-5541	Republic Services of California 661/257-3655	Permitted	6,000	• Construction/Demolition • Green Materials • Industrial • Inert • Mixed Municipal
Lancaster	6001 East Avenue "F" Lancaster, CA 93535	County of Los Angeles Department of Health Services 626/430-5541	Waste Management of California, Inc. 661/223-3437	Permitted	1,700	• Agricultural • Asbestos • Construction/Demolition • Green Materials • Contaminated Soils • Industrial • Inert • Mixed Municipal

TABLE 3-4
Class III Landfills

Landfill and Waste to Energy Facilities	Address	Lead Enforcement Agency	Operator/ Owner	Regulatory Status	Permitted Capacity Tons/Day	Waste Types Accepted^a
Puente Hills	2800 S. Workman Mill Road Whittier, CA 91745	County of Los Angeles Department of Health Services 626/430-5541	County of Los Angeles Sanitation District 562/699-7411	Permitted	13,200	• Agricultural • Ash • Construction/Demolition • Industrial • Mixed Municipal
Scholl Canyon Landfill	3001 Scholl Canyon Road Glendale, CA 91206	County of Los Angeles Department of Health Services 626/430-5541	County of Los Angeles Sanitation District 562/699-7411	Permitted	3,400	• Construction/Demolition • Industrial • Inert • Tires • Mixed Municipal
Sunshine Canyon Landfill	14747 San Fernando Road Sylmar, CA 91342	County of Los Angeles Department of Health Services 626/430-5541	Browning-Ferris Ind. 818/504-3017	Permitted	6,600	• Construction/Demolition • Industrial • Inert • Mixed Municipal

Notes:

a Specific types of waste that can and cannot be accepted are included in the audit packages for most disposal facilities.

TABLE 3-5
Waste to Energy Facilities

Landfill and Waste to Energy Facilities	Address	Lead Enforcement Agency	Operator/ Owner	Regulatory Status	Permitted Capacity Tons/Day	Waste Types Accepted^a
Commerce Refuse-to-Energy Facility	5926 Sheila Street Commerce, CA 90046	County of Los Angeles Department of Health Services 626/430-5541	County of Los Angeles Sanitation District 562/699-7411	Permitted	1,000	• Industrial • Mixed Municipal
Southeast Resource Recovery Facility	4000 Seaside Boulevard Long Beach, CA 90822	County of Los Angeles Department of Health Services 626/430-5541	City of Long Beach 562/570-1196	Permitted	2,240	• Green Materials • Mixed Municipal

TABLE 3-6

Material Recovery Facilities Currently Receiving Recyclables from the City of Los Angeles Curbside Collection Program

Facility Name	District(s) Served
1. City Fibers, Inc. 2500 S. Santa Fe Avenue Los Angeles, CA 90058	North Central and South Central
2. Bestway Recycling West L.A. Deposit Site 16001 W. Jefferson Blvd. Los Angeles, CA 90016	Western and South Central
3. Bestway Recycling 2268 Firestone Blvd. Los Angeles, CA 90002	Western and South Central
4. CR&R 11292 Knott Avenue Stanton, CA 90680	Harbor District
5. Sun Valley Paper Stock 8701 San Fernando Road Sun Valley, CA	East Valley District
6. City Fibers 16714 Schoenborn Street North Hills, CA 91343	West Valley District
7. Potential Industries (CR&R) 922 East E. Street Wilmington, CA 90744	Harbor District
8. Community Recycling (Transfer Station & MRF) 9189 De Garmo Avenue Sun Valley, CA	East Valley District
9. Angelus Western Paper Fibers (Transfer Station & MRF) 2472 Porter Street Los Angeles, CA	North Central and South Central
10. Bestway (Main Street) 1000 N. Main Street Los Angeles, CA 90012	North Central

TABLE 3-7
Composting Facilities

Composting Facility	Address	Lead Enforcement Agency	Operator/ Owner	Regulatory Status	Waste Type
Griffith Park Composting Facility	1555 Griffith Park Drive Los Angeles, CA 90027	City of Los Angeles Environmental Affairs Department 213/473-7867	City of Los Angeles Bureau of Sanitation 213/473-7867	Permitted	• Green Materials • Manure • Biosolids
Chiquita Canyon Sanitary Landfill	29201 Henry Mayo Drive Valencia, CA 91384	County of Los Angeles Department of Health Services 323/881-4151	Republic Services of California 661/257-3655	Permitted	• Green Materials
Whittier Fertilizer	9441 Kruse Rd., Pico Rivera, CA 90660	County of Los Angeles Department of Health Services 626/430-5541	U.S. Department of the Army, Engineer Dist. 213/452-3117	Permitted	• Green Materials
Rancho Las Virgenes Composting Facility	3700 Las Virgenes Rd., Calabasas, CA 91302	County of Los Angeles Department of Health Services 626/430-5541	Las Virgenes Municipal Water District 818/880-4110	Permitted	• Green Materials • Biosolids • Wood waste
Van Norman Mulching Facility	15751 Rinaldi St., Mission Hills, CA 91344	City of Los Angeles Environmental Affairs Department 213/978-0864	City of Los Angeles, Department of Water and Power 213/367-1162	Permitted	• Green Materials

TABLE 3-8
Disposal Facilities Used by City of Los Angeles Private Haulers in 2000

Facility	Reported Tonnage	Percent of Facility Type	Percent of Total Disposed Tonnage
Direct Haul to Landfill			
Bradley West	417,411	43.8%	20.8%
Calabasas	58,905	6.2%	2.9%
Chiquita Canyon	2,076	0.2%	0.1%
NuWay	23,757	2.5%	1.2%
Peck Road	2,827	0.3%	0.1%
Puente Hills	64,934	6.8%	3.2%
Reliance Pit	0	0.0%	0.0%
Scholl Canyon	10,496	1.1%	0.5%
Simi Valley	29,817	3.1%	1.5%
Sunshine Canyon	287,899	30.2%	14.3%
Other	55,257	5.8%	2.8%
Subtotal	953,380	100.0%	47.4%
WTE			
Commerce	40,442	62.7%	2.0%
SERFF	23,148	35.9%	1.1%
Other	966	1.5%	0.1%
Subtotal	64,556	100.0%	3.2%
Transfer			
Action	287,382	28.9%	14.3%
Athens	120	0.01%	0.01%
BelArt	60,586	6.1%	3.0%
BFI	57,444	5.8%	2.9%
Burrtec	664	0.07%	0.03%
Carson	72,326	7.3%	3.6%
Central LA	28,821	2.9%	1.4%
CRR	10	0.0%	0.0%
DART	4,850	0.5%	0.3%
Degarmo (Crown)	183,696	18.5%	9.2%
Falcon	19,381	2.0%	1.0%
Innovative	41,722	4.2%	3.0%
Paramount RR	35,540	3.6%	1.8%
Rainbow	30	0.0%	0.0%
So. Cal. Disposal	30,479	3.1%	1.5%
Southgate	14,260	1.4%	0.7%
WTR	94,195	9.5%	4.7%
Other	62,379	6.3%	3.2%
Subtotal	993,885	100.0%	49.4%
Total	2,011,822	100.0%	100.0%

1 Palmdale Landfill about 50 miles from CLARTS

6 Lancaster Landfill about 50 miles from CLARTS

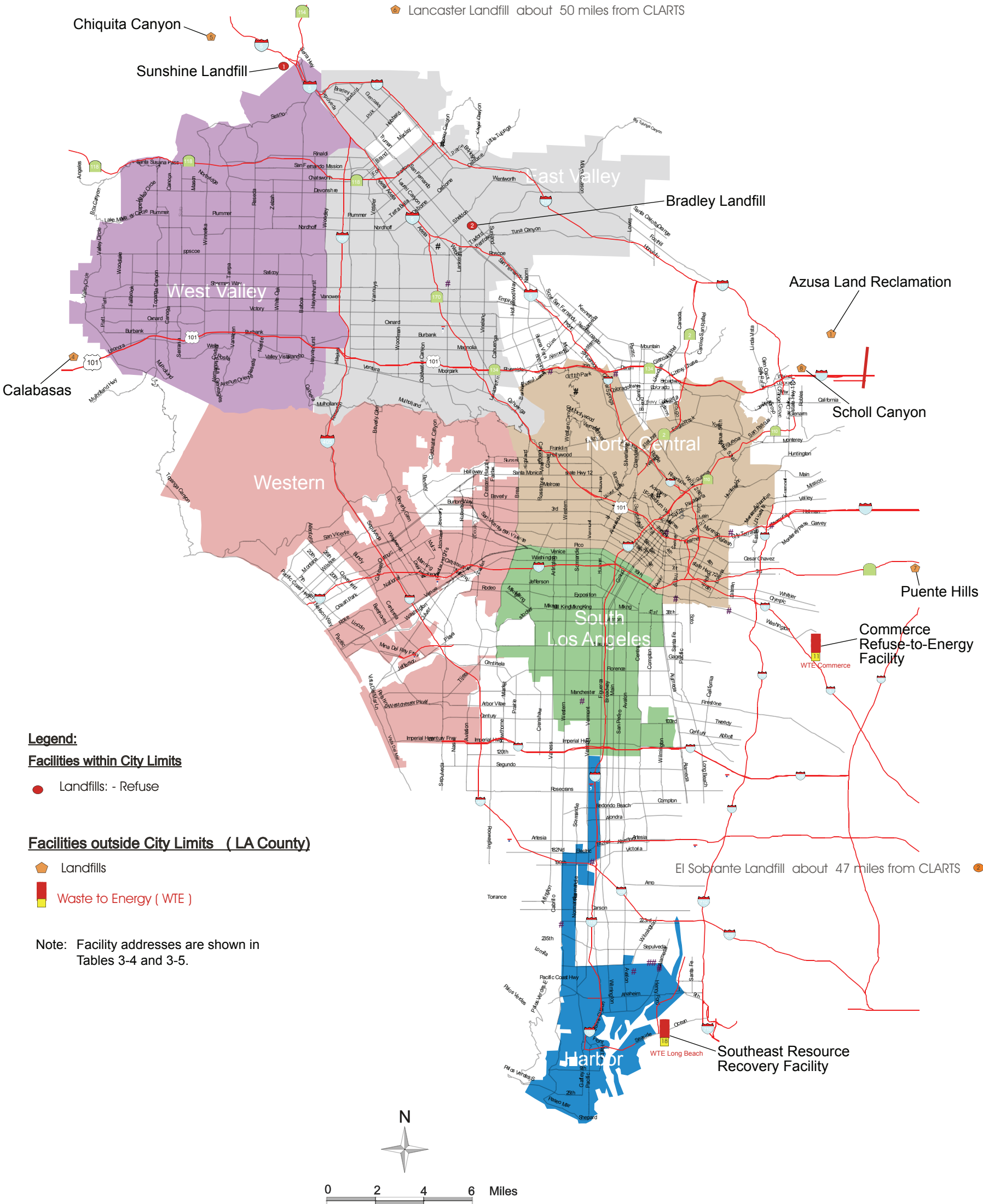


Figure 3-4
Existing Local Disposal Facilities

Source: City of Los Angeles Department of Public Works
Bureau of Sanitation, Solid Resources Group, August 2005

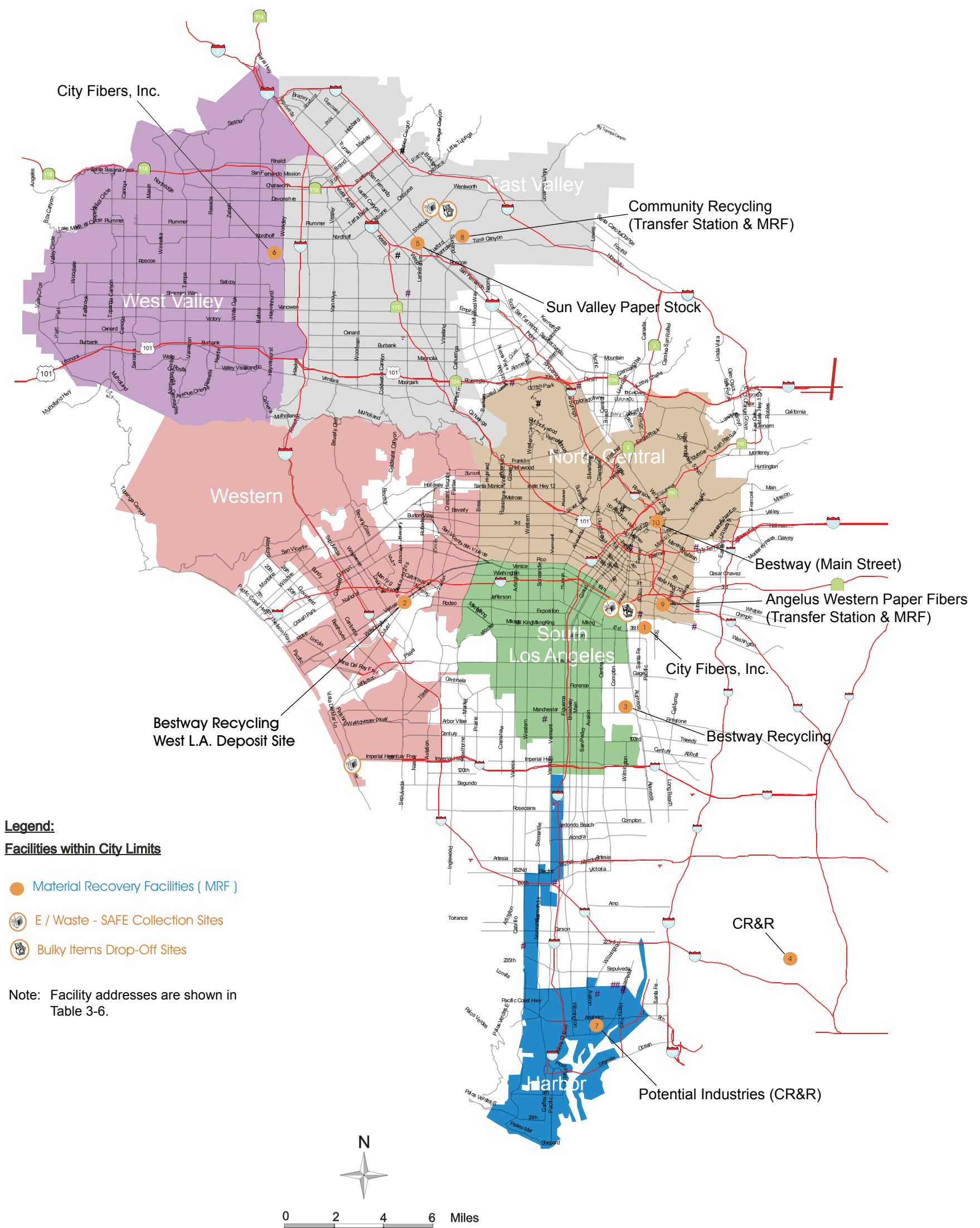


Figure 3-5
Existing Material Recovery Facilities

Source: City of Los Angeles Department of Public Works
Bureau of Sanitation, Solid Resources Group, August 2005

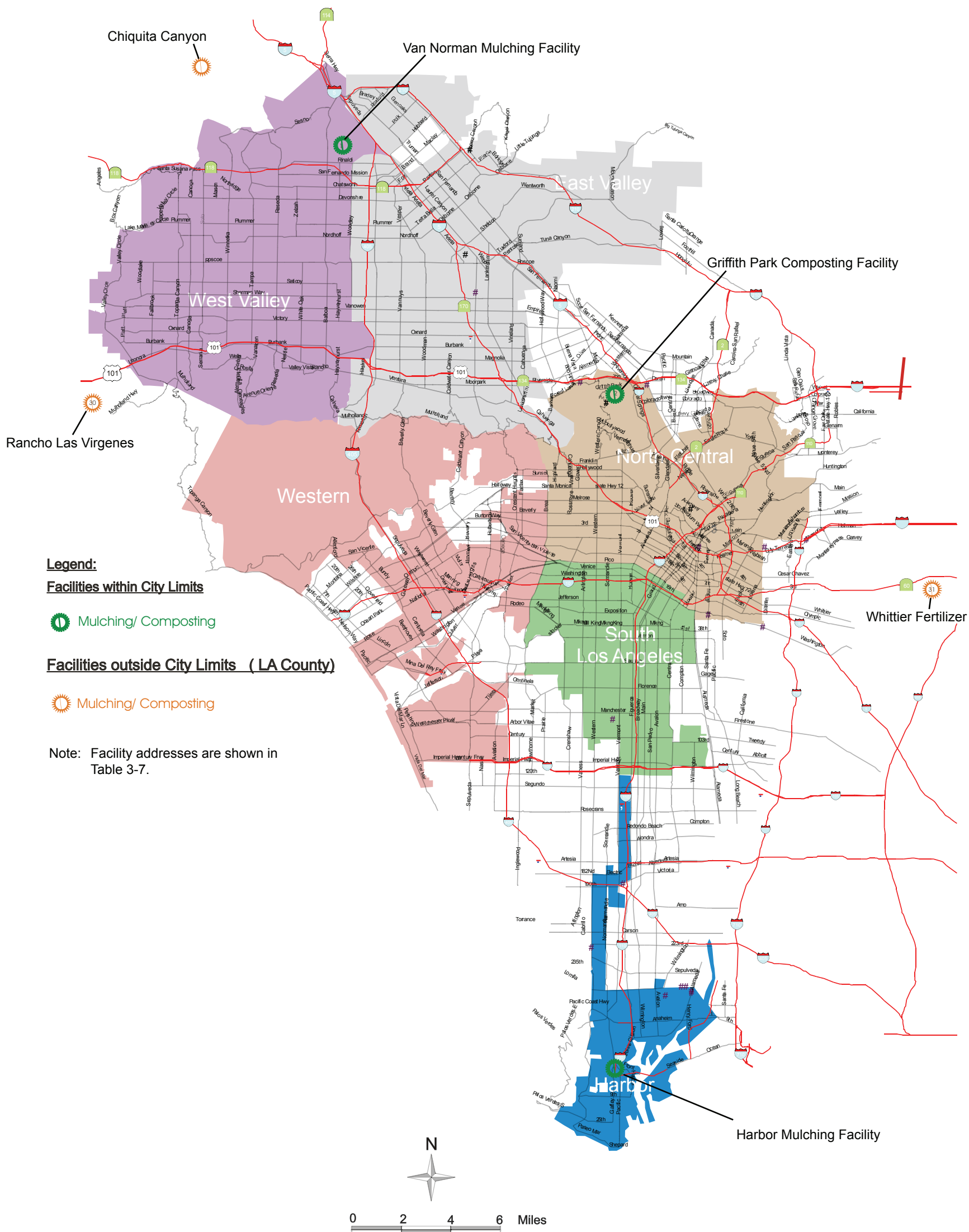


Figure 3-6
Existing Composting Facilities

Source: City of Los Angeles Department of Public Works
Bureau of Sanitation, Solid Resources Group, August 2005

4.0 City of Los Angeles Baseline (1993) Solid Waste Management Goals, Objectives, and Policies

In 1993, the City of Los Angeles adopted five waste management goals along with specific objectives and policies to achieve these goals. These goals, objectives, and policies are described in the CiSWMPP. The CiSWMPP policies provide both direction about future waste management practices in the City and guidance in developing and implementing programs involving source reduction, recycling, composting, collection, transfer, processing, and disposal. The goals and objectives, along with selective policies, are summarized below. A more detailed discussion of each of the policies, including specific projects and programs, is presented in the CiSWMPP. The CiSWMPP will form the baseline for the BOS new stakeholder driven process known as the Solid Waste Integrated Resource Plan (SWIRP).

4.1 Baseline Goal 1: Maximum Waste Diversion

It is the goal of the City of Los Angeles to create an integrated solid waste management system that maximizes source reduction and materials recovery and minimizes the amount of waste requiring disposal. Intermediate objectives established to achieve this goal are listed below.

4.1.1 Objective 1.1 – 25 Percent Diversion by Year 1995

It is the objective of the City of Los Angeles to comply with state law and, using 1990 baseline data, to divert at least 25 percent of the total City solid waste stream from reaching final disposal facilities by the year 1995.

4.1.2 Objective 1.2 – 50 Percent Diversion by Year 2000

It is the objective of the City of Los Angeles to comply with state law and, using 1990 baseline data, to divert at least 50 percent of the total City solid waste stream from reaching final disposal facilities by the year 2000.

4.1.3 Objective 1.3 – 70 Percent Diversion by Year 2020

It is the objective of the City of Los Angeles to comply with state law and, using 1990 baseline data, to divert at least 70 percent of the total City solid waste stream from reaching final disposal facilities by the year 2020.

Baseline Policies

Policies established to achieve these objectives include the following:

- **City Department Diversion Policy.** The City, through all City departments and agencies, shall take a leadership role in source reduction, recycling, and composting and serve as a model for other government agencies, institutions, businesses, and consumers.
- **Curbside Recycling Policy.** The City, through the BOS, shall collect recyclables (including newspapers, magazines, corrugated cardboard, aluminum, tin, glass, and plastic beverage containers) from the curbside of all households it services.
- **Yard Trimmings Policy.** The City, through the BOS, shall provide programs for all serviced households in the reduction or separation of yard trimmings and ensure the processing of these materials for reuse.
- **Commercial Generator Diversion Policy.** The City shall identify and target large commercial generators of potentially significant amounts of recyclable materials and develop guidelines for source reduction, recycling, and composting programs for these generators.
- **Technical Assistance.** The City shall provide technical assistance for program development to other government agencies, institutions, businesses, residential developments, and consumers to maximize source reduction, recycling, and composting.
- **City Contractual Requirements.** The City shall encourage source reduction, recycling, and composting and the use of recycled materials through its contractual relationships with vendors, other government agencies, and other contractors.
- **Education and Promotion.** The City shall provide extensive public education to government agencies, public and private institutions, businesses, consumers, and residents on a continuous basis to encourage their participation in source reduction, recycling, and composting programs.
- **New Projects and Developments.** The City shall require that all new projects or developments address solid waste management issues as part of the environmental review process and discretionary actions.
- **Public Involvement Program.** The City shall maintain a continuing public involvement program for implementation of its programs. The public involvement program shall include interacting with advisory committees, developing and disseminating public information, and conducting community meetings and workshops.
- **Material Recovery at Transfer Stations and Landfills.** The City shall require the maximum recovery of recyclables at transfer stations and landfills under the control of the City or with which the City has a contractual relationships.
- **Private Hauler Requirements.** The City shall require private haulers of solid waste within the City to submit reports annually to the DPW regarding disposal and diversion tonnages collected from customers.
- **Innovative Technologies.** The City shall encourage the development and implementation of feasible innovative methods of waste reduction, recycling, and composting to achieve diversion goals.

4.2 Baseline Goal 2: Adequate Recycling Facility Development

It is the goal of the City of Los Angeles to expand the siting of facilities that enhance waste reduction, recycling, and composting throughout the City beyond current limits of the Zoning Code in ways that are economically, socially, and politically acceptable. Intermediate objectives established to meet this goal are listed below.

4.2.1 Objective 2.1 – Facility Requirements

It is the objective of the City of Los Angeles to ensure that reduction, recycling, and composting facilities, needed to comply with state law and City diversion objectives, are developed and equitably distributed throughout the City.

4.2.2 Objective 2.2 – Zoning and Permit Issues

It is the objective of the City of Los Angeles to review facility siting requirements to encourage citywide development of reduction, recycling, and composting facilities.

Baseline Policies

Policies established to achieve these objectives include the following:

- **Bureau of Sanitation Material Recovery Facilities.** The City, through the BOS, shall obtain, through both publicly owned and privately contracted Materials Recovery Facilities, services to process and market recyclable materials collected as part of its curbside collection program.
- **Bureau of Sanitation Compost Facilities.** The City, through the BOS, shall obtain, through both publicly owned and privately contracted services, compost facilities to process and market yard trimmings collected as part of its yard trimmings collection or drop-off programs.
- **Private Recycling Facilities.** The City shall provide technical assistance to encourage private-sector development and operation of a mixture of recycling facilities to accept, transfer, process, or market recyclables or yard trimmings collected by private haulers. These facilities should be equitably distributed throughout the communities within the City.
- **Zoning Code Modifications.** The City shall review each type of recycling facility, determine the zoning requirements, and add these facilities into the Zoning Code.
- **Conditional Use Permits.** The City shall use the Conditional Use Permit process for siting reduction, recycling, and composting facilities in zones other than those in which these facilities are permitted by right, if these facilities are deemed a public benefit. A project for the public benefit will be defined as a reduction, recycling, or composting facility designed to service the surrounding residential, commercial/industrial, or governmental waste generators in a manner that minimizes adverse environmental impacts.

4.3 Baseline Goal 3: Adequate Collection, Transfer, and Disposal of Mixed Solid Waste

It is the goal of the City to ensure that mixed solid waste that cannot be reduced, recycled, or composted will be collected, transferred, and disposed of in a manner that minimizes adverse environmental impacts. Intermediate objectives established to meet this goal are listed below.

4.3.1 Objective 3.1 – Collection Services

It is the objective of the City of Los Angeles that the Bureau of Sanitation shall continue to provide collection services for single-family residential, small multifamily residential, and selected City facilities, and that adequate services for the collection of mixed solid waste that cannot be reduced, recycled, or composted shall be available for generators not serviced by the Bureau of Sanitation.

4.3.2 Objective 3.2 – Transfer Facilities

It is the objective of the City of Los Angeles to ensure that adequate transfer facilities are available close to waste generation centers to minimize travel and provide a cost-effective system for mixed solid waste collection, transfer, and disposal.

4.3.3 Objective 3.3 – Disposal Facilities

It is the objective of the City of Los Angeles to identify, evaluate, and secure by the year 2000 adequate disposal capacity to accommodate projected waste requiring disposal to the year 2020 with a minimum reserve capacity in the year 2020 for 20 years of additional disposal. Waste requiring disposal shall be calculated assuming achievement of Goal 1.

4.3.4 Objective 3.4 – Special Waste

It is the objective of the City of Los Angeles to develop programs for targeted special waste to reduce the amount that is landfilled, to increase its beneficial use, and to reduce hazards associated with its disposal.

Baseline Policies

Policies established to achieve these objectives include the following:

- **Bureau of Sanitation Weekly Collection.** The City shall provide, at a minimum, weekly collection to all residences served by the BOS.
- **On-Call Collection for Bulky Waste and Dead Animals.** The City shall provide on-call collection services for bulky waste and ensure maximum diversion and reuse of these materials. The City shall also provide on-call collection services for dead animals.
- **Private Collection.** The City shall allow private haulers and recyclers to operate competitively in a free market system under specified conditions.
- **Bureau of Sanitation Transfer Facilities.** The City shall obtain, through both publicly owned and privately contracted transfer facilities, services for mixed solid waste and separated yard trimmings in each refuse collection district. Contracts shall consider the diversion objectives of the City.

- **Conditional Use Process.** The City shall use the Conditional Use Permit process for siting transfer facilities in zones other than those in which these facilities are permitted by right, if these facilities are construed as a public benefit.
- **Local Disposal.** The City shall work closely with the Los Angeles County DPW, Los Angeles County Sanitation Districts, other jurisdictions, and private firms to identify and secure additional disposal capacity in or outside the county to meet the needs of the City of Los Angeles.
- **Remote Disposal.** The City shall have the ability to transport, either by rail or truck, a portion of the waste requiring disposal to remote locations outside the County of Los Angeles, provided such disposal is environmentally safe, technically feasible, and publicly acceptable.
- **Other Waste Disposal Methods.** The City shall evaluate the development of programs for innovative methods, other than landfilling, for disposing of solid waste.

4.4 Baseline Goal 4: An Environmentally Sound System

It is the goal of the City to develop an environmentally sound solid waste management system that protects public health and safety, protects natural resources, and uses the best available technology to accommodate the needs of the City. Intermediate objectives established to meet this goal are listed below.

4.4.1 Objective 4.1 – Facility Performance Standards

It is the objective of the City of Los Angeles that facilities will be sited and its integrated waste management system, including source reduction, recycling, composting, and disposal programs, will operate to minimize adverse environmental impacts.

4.4.2 Objective 4.2 – Reduced Collection Vehicle Emissions

It is the objective of the City of Los Angeles to effect a reduction in vehicle emissions through regular maintenance, the use of alternative fuels, and reduction in vehicle miles of travel.

4.4.3 Objective 4.3 – Disaster Plan

It is the objective of the City of Los Angeles to have a comprehensive disaster plan that will address methods for collection and disposal of large quantities of waste generated from natural or manmade disasters.

4.4.4 Objective 4.4 – Community Involvement

It is the objective of the City of Los Angeles to promote active community involvement and to review existing or proposed plans, programs, and projects to ensure that the solid waste management system is environmentally sound and protects public health and safety, protects natural resources, maximizes diversion goals, and uses the best available technology to accommodate the needs of the City.

Baseline Policies

Policies established to achieve these objectives include the following:

- **Transportation/Access.** The City shall require that public and private facilities are designed and operated to minimize potential adverse impacts to the existing level of service on access roads.
- **Noise Impacts.** The City shall require that public and private facilities be constructed and operated to comply with applicable regulations and not to exceed the sound levels outlined in Chapter XI, Section 111.03, of the Municipal Code for the City of Los Angeles.
- **Air Quality.** The City shall require that public and private facilities be constructed and operated to minimize potential adverse impacts to the air quality in the Los Angeles Basin.
- **Water Use/Quality.** The City shall site and design facilities to minimize potential adverse impacts from surface water runoff from the site or infiltration of potentially contaminated water into underlying aquifers.
- **Health and Safety Impacts.** The City shall require that public and private facilities within the City be designed, constructed, and operated to minimize adverse health and safety impacts on employees and the public and to minimize the risk of operational upset.
- **Visual and Aesthetic Compatibility.** The City shall require that public and private facilities sited, constructed, and operated within the City be visually and aesthetically compatible with the surrounding community and shall minimize adverse impacts from light and glare.
- **Geological Factors.** The City shall require that public and private facilities be sited and designed to address geological factors including topography, soil characteristics, and geological hazards.
- **Odor Control.** The City shall require that public and private facilities be designed, constructed, and operated to minimize the generation of objectionable odors.
- **Plant and Animal Life Protection.** The City shall require that public and private facilities be designed, constructed, and operated to minimize the adverse impact upon plant and animal life in the surrounding community.
- **Maintenance.** The City shall effect a reduction in emissions from its vehicles by continuing and improving scheduled maintenance and inspection programs.
- **Alternative Fuels.** The City shall support the development and use of equipment powered by substitute fuels such as methanol, natural gas, or electricity as a replacement for internal combustion equipment.
- **Vehicle Capacity.** The City shall advocate the use of high-capacity transfer vehicles for transporting waste and maximizing the capacity of vehicles used for the City's curbside collection program to minimize vehicle miles of travel.

- **Disaster Plan.** The City shall develop a disaster plan that addresses solid waste issues in case of natural or man-made disaster. The plan will address collection, transportation, temporary storage, and final disposal.
- **Public Reviews.** The City shall ensure that the public has adequate opportunity to review plans, programs, and policies related to solid waste management issues.

4.5 Baseline Goal 5: A Cost-Effective Solid Waste Management System

It is the goal of the City to operate a cost-effective, integrated waste management system that emphasizes source reduction, recycling, reuse, and market development and is adequately financed to meet operational and maintenance needs. Intermediate objectives established to meet this goal are listed below.

4.5.1 Objective 5.1 – Market Development

It is the objective of the City of Los Angeles to actively promote market development to ensure that diverted materials are recovered and reused locally, if possible.

4.5.2 Objective 5.2 – Economic Development

It is the objective of the City of Los Angeles to create an environment that will be conducive to the creation and expansion of recycling-based businesses or businesses using recycled materials and to encourage businesses to introduce recycled material into their manufacturing process.

4.5.3 Objective 5.3 – Monitoring and Evaluation

It is the objective of the City of Los Angeles to continually monitor and evaluate the cost and benefits of programs and to modify programs as required to reduce costs and improve effectiveness.

4.5.4 Objective 5.4 – Funding

It is the objective of the City of Los Angeles to ensure that adequate funds are available for an effective program for managing the City's solid waste and that costs are equitably distributed in proportion to the services provided.

Baseline Policies

Policies established to achieve these objectives include the following:

- **Contract Requirements.** The City, through all its departments, shall encourage source reduction, market development, and the use of recycled materials through its contractual relationships with vendors, other government agencies, and other contractors.
- **Education, Promotion, and Public Outreach.** The City shall develop and maintain staff with expertise in market development and public outreach to provide extensive education to government agencies, public and private institutions, businesses, consumers, and residents to encourage market development and use of recycled materials.

- **Innovative Technologies.** The City shall encourage the development and implementation of feasible innovative methods of market development and the use of recycled materials.
- **Overcoming Barriers to Business Startup or Expansion.** The City shall seek ways to help site recycling businesses in areas convenient to sources of supply and markets and assist in making such businesses eligible for the fast-track process for obtaining City permits.
- **Financial Assistance.** The City shall establish an ongoing program to contract with private agencies to provide technical assistance for businesses receiving Community Development Block Grant funds as well as maintain contact with the venture capital community to familiarize them with legislative and administrative policies affecting the viability of products using recycled materials.
- **Building Partnership Opportunities.** The City shall build lines of communications with Chambers of Commerce, nonprofit organizations, major generators, public and private schools, and universities in an effort to build partnership opportunities.
- **Reporting Requirements.** All City departments and agencies shall report annually the amount of waste disposed of and diverted from disposal, cost of waste management programs and revenues received, market development activities for the previous year, and plans for the next year.
- **Extra Capacity Container Fee.** Households serviced by the BOS may be charged a fee for capacity provided by the City in excess of standard allotment.
- **Hauler Fees.** The City shall charge haulers a fee to be passed on to generators based on the tonnage of mixed solid waste collected and disposed of to cover costs related to managing source reduction, recycling, and composting programs.
- **Grants.** The City shall continually pursue state or federal grants to support innovative solid waste management activities and to help fund the City's solid waste, recycling, and market development programs.
- **Financing.** Additional monies needed to support the City's Solid Waste Management Program shall be obtained from specific fees and charges for services or from the General Fund.

5.0 Best Practices

5.1 Background and Methodology

In 2000, the BOS completed a survey of the solid resources collection industry to determine “best practices” that might help the Solid Resources Collection Division improve its operating procedures and bottom line costs. The Committee consisted of members of both labor and management committees, known as Process Action Teams (PAT). The PAT Committee accomplished its objectives of identifying current best practices and programs used by diverse organizations and benchmarking SRCD performance in the solid waste industry by comparing existing operating costs, program initiatives, and service options. In addition, the PAT process enabled labor and management to work together to find ways to support the BOS’s ongoing initiatives for cost efficiencies while improving operations, customer service, and the working environment of employees.

The scope of the Committee’s work included:

- Developing a strategic plan for the Committee’s operation
- Identifying major study areas, including core operations
- Developing a comprehensive questionnaire designed to obtain information about core functions and practices
- Identifying the initial survey participants
- Selecting and visiting seven municipal agencies and a number of related private organizations supporting the agencies
- Reviewing industry literature
- Interviewing survey participants
- Analyzing survey results and observations
- Reviewing the final report and recommending next steps

The Committee circulated a comprehensive questionnaire, which focused on core industry functions and practices, to 16 municipal collection agencies around the country. Of the 16 agencies queried, 14 agencies participated in the surveys and the Committee selected 7 agencies for onsite visits.

Seven solid waste facilities in the areas listed below were selected, based on information obtained from the surveys and input from industry members:

- Seattle, Washington
- King County, Washington
- San Antonio, Texas
- Houston, Texas
- San Diego, California

- Ontario, California
- Long Beach, California

At each of the sites, the Committee interviewed managers and workers about existing policies and procedures and observed operations in the field and at transfer stations and landfills.

5.2 Recommendations

The Committee recommended the following best practices, some of which had already been implemented by SRCD:

- Initiate a study to determine the feasibility of implementing a full cost recovery fee system instead of relying upon the General Fund for an operating budget
- Collaborate with other public organizations to expand the BOS's operational and financial options
- Continue to team with employees through labor/management initiatives to achieve and maintain the most cost-effective customer service
- Seek appropriate legislation through the municipal code for a Solid Waste and Litter Control Ordinance granting enforcement powers to the SRCD
- Continue to work with General Services' management to improve daily fleet maintenance at each of the district yards
- Open negotiations with General Services to establish a permanent mobile road truck for each district to allow minor or routine repairs on the road without requiring the truck to return to the district
- Authorize the appropriate PAT committee to review current pre-trip inspection protocols in Los Angeles and at other properties
- Explore the financial feasibility of acquiring other transfer stations for districts which have a substantial travel time to the landfills
- Investigate the operational feasibility of increasing container size to 90 gallons for green waste collection
- Expand community outreach, including:
 - Raise awareness about the City's recycling program among school children
 - Advise the community of solid resource programs through community circulars or newspapers
 - Develop a drive-through recycling center for disposal of used goods and hazardous waste and an educational facility for the community
 - Reduce illegal dumping by introducing bulky item drop-off at all districts
 - Introduce a free mulching program for Los Angeles residents with public classes on composting
 - Improve the operation of the telephone complaint system to ensure timely and professional resolution of public issues

6.0 Alternative Technologies

6.1 Study Methodology

The BOS retained a consultant to conduct an evaluation of alternative MSW processing technologies to process residential refuse or post-source separated MSW. The main objective of the evaluation was to “identify alternative MSW processing technologies that will increase landfill diversion in an environmentally sound manner, while emphasizing options that are energy efficient, socially acceptable, and economical.”

The City uses three bins to collect solid waste from residences: green bins for green waste, blue bins for recyclables, and black bins for refuse. The green- and blue-bin materials are recycled. The black-bin refuse, or post-source separated MSW, which is landfilled, was the subject of this study.

Potential technologies identified to meet the City’s objectives were:

- Thermal Technologies
- Biological/Chemical Technologies
- Physical Technologies

6.1.1 Thermal Technologies

Thermal technologies operate at temperatures greater than 400°F and have high reaction rates. They typically operate in a temperature range of 700 °F to 10,000 °F. Most thermal technologies are used to produce electricity as a primary byproduct. Thermal technologies include advanced thermal recycling, a form of waste-to-energy conversion, and thermal conversion. Thermal conversion converts the carbon-based portion of the MSW stream into a synthetic gas, which is subsequently used to produce products such as electricity, chemicals, or green fuels.

6.1.2 Biological/Chemical Technologies

These technologies operate at lower temperatures and lower reaction rates. They can accept MSW feedstock with high moisture levels, but require material that is biodegradable. Byproducts of this process include electricity, compost, and chemicals.

6.1.3 Physical Technologies

These technologies involve altering the physical characteristics of the MSW feedstock. The materials in the MSW may be separated, shredded, or dried in a processing facility. The resulting material is referred to as refuse-derived fuel. The fuel can then be densified into homogenous fuel pellets and transported and combusted as a supplementary fuel in utility boilers.

During the evaluation, 20 MSW processing technologies from 17 suppliers were evaluated. Supplier data were used to prepare a life-cycle analysis associated with the implementation of alternative waste processing technologies in the City’s integrated solid waste

management system. This allows the City to most accurately compare these new technologies to existing solid waste management practices. In a life-cycle analysis, the energy and emissions associated with fuels, electrical energy, and material inputs for all stages of the waste management process (i.e., collection, transfer, treatment, and disposal) are captured. Supplier data were also used to conduct a comparative analysis of the technologies. The comparative analysis addressed technical, environmental, and cost issues, including:

- Throughput
- Electricity production
- Net efficiency in kWh/ton feedstock
- Diversion rate
- Air emissions
- Solid wastes
- Regulatory issues
- Capital cost
- Revenues
- Estimated tipping fees

6.2 Key Findings

The study evaluated the environmental, technical, and economic feasibility of alternative technologies to process black-bin post-source separated MSW. Table 6-1 provides a summary of these key findings.

TABLE 6-1
Alternative Solid Waste Processing Technologies
Key Findings

Key Finding Description	Advanced Thermal Recycling	Thermal Conversion	Biological Conversion
Siting/Environmental			
Diversion rate, the percentage of black bin post-source separated MSW that is diverted from landfilling, is an important objective for this project.	At least ninety percent diversion expected, with a worst-case rate of 80%.	At least ninety percent diversion expected, with a worst-case rate of 80%.	Eighty percent diversion rate expected with a worst-case rate of 50%.
Air emissions characteristics will differ among the alternative technology groups evaluated. All technology groups will meet regulatory limits.	Air emission control systems are available to limit emissions to well below regulatory limits.	Thermal conversion systems are expected to result in emissions well below regulatory limits.	Emissions from biological systems will be lower than thermal technologies due to lower operating temperatures.
Wastewater will be generated in relatively small quantities. This liquid waste will either be recycled or discharged to a local sewer.	No significant difference among technologies.		
Solid residue will be generated from material rejects, process waste, and air emission control systems.	Advanced thermal recycling systems will generate bottom ash, boiler ash, and fabric filter ash. Assuming the bottom ash is recycled, about 5% of the incoming material will be landfilled.	Similar to advanced recycling systems.	Biological systems will typically generate unmarketable residuals consisting of 15-40% of the total throughput.
An alternative MSW processing technology can be sited in urban Los Angeles.	No fatal siting constraints were identified. The best sites will be in heavy industrial (M3) areas of the City.	No fatal siting constraints were identified. The best sites will be in heavy industrial (M3) or heavily commercial areas of the City.	No fatal siting constraints were identified. The best sites will be in heavy industrial (M3) or heavily commercial areas of the City.
The pathway regarding environmental regulations differs by technology in California.	Several waste-to-energy facilities have been permitted in California. Therefore, regulations exist for advanced thermal recycling systems to obtain the required environmental permits to operate.	The legislature and the CIWMB are establishing a regulatory framework for thermal conversion technologies. The lack of such a framework will complicate permitting these facilities.	The technology for biological conversion in this study is anaerobic digestion. Regulations exist in California for this technology, although no systems have been permitted for treatment of MSW.

TABLE 6-1
Alternative Solid Waste Processing Technologies
Key Findings

Key Finding Description	Advanced Thermal Recycling	Thermal Conversion	Biological Conversion
Life Cycle Analysis of energy consumption reveals advantages of employing thermal or biological MSW processing technologies.	Thermal technologies and biological conversion technologies will create significant energy savings when compared to landfilling. This energy savings results from a combination of syngas and electrical energy production, as well as from materials recovery and recycling. For example, if a 250,000 TPY per year thermal conversion facility replaced this quantity of black bin post-source separated MSW going to the landfill, the energy savings would be about 2.6 million MBtu, which is equivalent to a 30 MW power plant operating for one year.		
Life Cycle Analysis of criteria pollutant emissions reveals advantages of employing thermal or biological MSW processing technologies.	For the criteria air emissions, the advanced thermal recycling, gasification and anaerobic digestion scenarios also performed generally better than landfilling. The reduced transportation needed to take waste to the landfill contributed to the air emission reductions offered by advanced thermal recycling, gasification, and anaerobic digestion. For example, if a 250,000 TPY thermal conversion facility treated this quantity of black bin post-source separated MSW, about 425 tons of NO _x emissions per year would be saved (avoided), which is equivalent to the NO _x emissions emitted from a 975 MW natural gas-fired power plant operating for a year.		
Technical			
The technical maturity of alternative MSW processing technologies differs.	Combustion of MSW is the most mature of the alternative MSW processing technologies evaluated. Approximately 100 such facilities are operational in the U.S., with many more in Europe and Japan (these facilities are predecessors of the new advanced thermal recycling technology).	Thermal conversion technologies have been in successful, long-term use around the world, although typically using more homogeneous feedstocks such as coal and biomass. While technical challenges are expected, because of their relatively short operating history using MSW as a feedstock, these challenges are judged to be manageable.	Biological conversion facilities processing source separated organics (SSO), and more recently MSW, are operating in Europe and elsewhere overseas.
Facility designs are relatively new; therefore, current facility designs generally have not achieved the desired level of optimization.	There is room for improvement in most designs that would better integrate the three major components of a system (pre-processing, combustion/conversion, and post-processing/byproduct production). This would increase efficiency and reduced cost/ton.		
Air emission control systems are commercially available to limit air emissions to below regulatory levels for all technologies.	Applies to all technology groups.		

TABLE 6-1
Alternative Solid Waste Processing Technologies
Key Findings

Key Finding Description	Advanced Thermal Recycling	Thermal Conversion	Biological Conversion
Thermal efficiency, the amount of net electricity generation per ton of feedstock processed, varies by technology. Higher efficiencies result in better financial performance.	Thermal technologies that use a steam turbine for electricity production have thermal efficiencies in the range of about 500-600 kWh/ton. If a reciprocating engine is used, the efficiency will increase to about 800-900 kWh/ton.		Thermal efficiency is in the range of 150-200 kWh/ton using reciprocating engines. Thermal processes recover more energy than biological ones because they convert essentially all organics to energy, not just the biodegradable organics.
Solid residuals generated by these technologies differ in composition.	Residuals include boiler and fabric filter fly ash (assumes bottom ash is recyclable). This material, although small in terms of quantity (about 7500 tons/yr for a 400,000 TPY facility), may be classified as hazardous.	Residuals for low temperature gasification and pyrolysis include boiler and fabric filter fly ash, and bottom ash (if not recycled). These materials, although small in quantity (1000-6000 tons/yr for a 100,000 TPY facility), may be classified as hazardous. Residuals (slag) from high temperature gasification will be non-hazardous and inert.	Residuals primarily will consist of unmarketable rejects, which will be landfilled. Quantities will range from 15,000 to 40,000 tons/yr for a 100,000 TPY facility.
Revenue/ton can be viewed as a measure of recycling effectiveness, or the ability of the technology to achieve higher market value for its byproducts.	Suppliers in this category can achieve revenues of about \$32-36 per ton.	Suppliers in this category can achieve revenues of up to \$40-60 per ton. This higher range is due to greater pre-processing and higher thermal efficiencies.	Suppliers in this category can achieve revenues of about \$20-30 per ton. This lower range is due to the production of compost.
The quality of response from the suppliers affected the results of this study with regard to the technical evaluation.	The quality of response from suppliers varied. Some responses were incomplete, and others indicated that some information and data were confidential. This situation affected the presentation of material in this report, particularly with respect to technical issues and economics.		
Economics			
The financial feasibility, as measured by a breakeven tipping fee, varied among technologies and suppliers.	Advanced thermal recycling systems exhibited breakeven tipping fees of \$56-\$64/ton for 330-380K TPY facilities. The small range is attributed to the extensive experience with this technology (i.e. its predecessor technology) in the U.S.	Thermal conversion breakeven tipping fees exhibited a wide range (\$20-\$128/ton for 100K TPY, and \$20-\$40/ton for 360-400K TPY facilities). This is attributed to the lack of experience with these facilities in the U.S.	Biological conversion breakeven tipping fees exhibited a wide range (\$19-\$97/ton for a 100K TPY facility).

TABLE 6-1
Alternative Solid Waste Processing Technologies
Key Findings

Key Finding Description	Advanced Thermal Recycling	Thermal Conversion	Biological Conversion
Economy of scale is a term that refers to the variation in project economics with facility throughput. In general, the tipping fee decreased with increasing throughput.	Only one size was proposed (330-380K TPY)	Several responses addressed throughput levels from 100K to 400K TPY. In some cases, significant reductions in tipping fee result with higher throughputs, although insufficient data exists to be specific.	Several responses addressed throughput levels from 100K to 300K TPY. In some cases, significant reductions in tipping fee result with higher throughputs, although insufficient data exists to be specific.
Byproduct marketability is an important issue. Significant uncertainty with regard to some materials may impact economic viability.	Advanced thermal recycling gains most of its revenue from the sale of electricity. This is a well-developed market. Although only small amounts of bottom ash are presently recycled/reused, this is expected to increase as designs isolate the potentially hazardous fly ash from the bottom ash.	Thermal conversion gains most of its revenue from the sale of electricity, a well-developed market. Another significant revenue source for some designs are the recyclables recovered from pre-processing the inlet black bin post-source separated MSW. The market for glass, metals and paper is also well-developed.	Biological conversion facilities produce both electricity and compost. The compost is produced in large quantities (15,000-40,000 tons/yr for a 100K TPY facility). California compost quality regulations are complex. Extensive testing is required to ensure acceptability. In addition, the market for this material is uncertain.
With regard to conversion technologies, the relationship of project economics to supplier experience generally indicates that the more experienced suppliers provide higher project costs.		The lowest breakeven tipping fees (in the neighborhood of \$15-\$30/ton) were provided by suppliers with the least number of operating units. These results could not be verified in this study; therefore, additional evaluation is needed.	
Pre-processing to remove recoverable recyclables increases revenues. The value of uncontaminated recyclables in the black bin post-source separated MSW is higher as a recyclable material than as a feedstock to produce electricity.		Applies to all technology groups.	

Source: Evaluation of Alternative Solid Waste Processing Technologies, City of Los Angeles, Bureau of Sanitation

6.3 Conclusions

Based upon the key findings from the evaluation of the technologies, the following conclusions were made:

- Alternative MSW processing facilities can be developed successfully in the City of Los Angeles.
- The most optimal technology for processing black-bin post-source separated MSW on a commercial level is thermal technology, including advanced thermal recycling and thermal conversion (pyrolysis and gasification).

The advantages of thermal technologies over biological conversion include:

- Higher landfill diversion rates
- Lower production of solid byproducts and greater production of electricity
- Less risk in terms of byproduct marketability
- Significantly higher thermal efficiencies and, therefore, higher revenue/ton because thermal processes convert essentially all organics to energy (not just biodegradables)
- More operational experience at higher throughputs

6.4 Recommendations

Based on the evaluation of MSW processing technologies to process residential/post-source separated refuse, the following recommendations were made to the City of Los Angeles.

6.4.1 Initiate Public Outreach

Educating the public and public acceptability are critical aspects of the project's success. Soliciting feedback regarding the public's attitude toward the technologies under consideration is the first step of the process. The second step of public outreach takes place after the technology supplier is selected and alternative site locations are known. Then the outreach becomes more specific and focused on the communities directly affected by the project.

6.4.2 Develop a Short List of Suppliers

A list of eligible suppliers should be developed, prior to issuing a Request for Proposals (RFP). The list should be combined using the following input:

- Results of the supplier evaluation conducted during the study
- Review of key uncertainties remaining after the supplier evaluation
- Feedback from the public outreach program on technology preferences

6.4.3 Conduct Initial Siting Study

Prior to issuing the RFP for the development of an alternate technology, an initial siting study should be conducted to determine site environmental constraints and availability of infrastructure.

6.4.4 Prepare RFP and Select Preferred Suppliers

The RFP should contain detailed instructions, and each bidder must provide comprehensive design and cost and revenue estimates, as well as information on performance guarantees and financing. Based on responses to the RFP, the preferred supplier will be selected.

6.4.5 Conduct Facility Permitting and Conceptual Design

Once the technology supplier is selected, a conceptual design should be prepared to support preparation of environmental and permit application documents. These environmental documents will be submitted to the appropriate agencies for review. A series of public meetings will be held during agency review.

6.4.6 Perform Detailed Design and Construction

Detailed facility design should be prepared, based on the facility to be constructed, followed by startup and initiation of operations.

7.0 Summary of Baseline Solid Resources Infrastructure Plan

In November 2000, the BOS issued a report titled "Solid Resources Infrastructure Plan." The report was in response to a directive by the City Council to prepare an Action Plan to examine (1) the waste disposal alternatives available when the Lopez Canyon Landfill closed, (2) measures to increase waste diversion, and (3) revenue raising alternatives to finance new solid resources projects. Key strategies and implementation status are presented below.

1. Develop a transfer facility and/or recycling center in the Central Los Angeles area.

The City Council on December 19, 2003, exercised its purchase option with BLT Enterprises, and authorized acquisition of the Central Los Angeles Recycling and Transfer Station (CLARTS). Escrow for acquisition of the 9-acre facility closed on April 5, 2004.

The acquisition of CLARTS in April 2004 provides the City with an important tool for managing its waste. This facility is permitted for 4,025 tons per day. The City had previously contracted for use of this facility to transfer approximately 1,500 tons per day of City-collected waste from the South and North Central Collection Districts, which continues to go to the facility. Under the purchase option, the City assumed the obligation to take an additional 500 tons per day from a waste hauler. The long-term goal is for this facility to handle both City-collected and privately collected waste, and to increase the permitted capacity.

CLARTS is the first City-owned and operated transfer station. In an emergency, CLARTS could manage all of the 3,500 tons per day of refuse collected by City crews.

2. Develop a transfer facility and/or recycling facility to serve the West Los Angeles area.

The City continues to pursue the development of a transfer station for the West Los Angeles area. Originally, property at 6000 West Jefferson Boulevard was purchased for this purpose, but was removed from consideration as a transfer station by the City Council on June 27, 2003.

3. Relocate the East Valley Collection Yard. Develop a new East Valley collection yard facility.

This objective is completed. Sale of the existing yard at 9701 San Fernando Road was concluded with the close of escrow on January 28, 2003. The old yard was leased back from the developer until the Bureau relocated to the new East Valley Solid Resources Management Complex 11050 Pendleton Street in June 2003.

4. Develop permanent Household Hazardous Waste (HHW) drop-off facilities for City residents to provide year-round services and encourage safe disposal of these materials.

Development of these SAFE (solvents, automotive, flammables, and electronic) collection facilities, as they are called now, is ongoing. Five are presently in operation at the Hyperion Treatment Plant, the East Los Angeles site at 2249 East Washington

Boulevard, the Harbor District Collection Yard at 1400 North Gaffey Street, the new East Valley Solid Resources Management Complex in Sun Valley (at 11025 Randall Street), and UCLA at 550 Charles E. Young Drive West.

5. Continue to pursue the development of yard trimmings processing, mulching, and shipping facilities and marketing of the finished product within the City.
The BOS has been successfully operating mulching facilities at the Van Norman Dam and at the Harbor District yard. The new Lake View Terrace Green Recycling Facility initially began operation December 22, 2003, as a mulching facility. As staffing is added and capital improvements are completed, the facility will expand to a full composting operation processing approximately 125 tons per day of yard trimmings.
6. Continue to research and develop the use of Material Recovery Facilities to preprocess all residual waste prior to delivery to a disposal site.
This is an ongoing activity.
7. Establish a capital improvement expenditure program to upgrade all collection yard facilities to meet current environmental and health and safety standards, and to provide an adequate working environment for our employees.
This is an ongoing activity. Interior improvements have been completed in the locker room and office, as well as refurbishment of the truck wash at the South Los Angeles District yard. Remodeling of the offices and locker room at the Harbor District yard began in Spring 2004. Expansion of the West Valley yard to accommodate liquefied natural gas (LNG), add more repair bays, and refurbish the truck wash, was completed in February 2004. New or reconstructed yards are planned for the Harbor and West Los Angeles. These upgrades and new construction will be financed using Sanitation Equipment Charge Revenue Bonds.
8. Perform closure construction at all six inactive landfill sites owned by the City.
Once a landfill ceases acceptance of refuse, the California Code of Regulations requires closure construction by the owner, followed by post-closure maintenance. Closure construction is continuing at both the former Lopez Canyon landfill, which ceased operation in 1996, and Toyon Canyon landfill, which ceased operation in 1985. The Gaffey Street landfill was closed and improved with the Field of Dreams soccer complex. The Bishops Canyon landfill was closed and improved with a baseball complex and passive recreation. The Branford landfill was sold together with the old East Valley yard and will undergo final closure as part of an industrial park development. The Sheldon Arleta landfill is proposed for final closure in connection with a recreational complex to be developed by the Department of Recreation and Parks.
9. Acquire the minimal long-term disposal capacity that the City will need beyond the year 2001.
This was partially accomplished through contract with the Sunshine Canyon landfill. The current contract expires June 2006. City Council is reviewing available alternatives with a decision expected in February 2006. Alternative disposal is being explored through the Request for Quote/Proposal/Bid (RFQ/RFP/RFB) process, as well as rail haul to remote landfills in the California desert. The purchase of the CLARTS near

downtown Los Angeles provides the City with the option of using other local landfills for disposal.

10. Develop a financing plan with the assistance of the City Administrative Office for the recommended Solid Resources capital improvement program.
This is an ongoing activity through the annual Capital Improvement Expenditure Program (CIEP) budget submittal. The primary funding source is the Sanitation Equipment Charge (SEC), which is assessed on the City residents as part of the Department of Water and Power bi-monthly billings.
11. Identify a method of receiving Citywide public review of plans and actions in the Solid Resources programs similar to the Solid Waste Citizens' Advisory Group.
The original 2000 Infrastructure Plan envisioned that public input would occur as part of the Charter reform process. Neighborhood Councils were primarily established for this purpose, but the number of them make it difficult to gather information on just solid waste issues. Input might be better from representatives of the Mayor's "Teamwork Los Angeles," or a specially formed group to address solid waste issues.
12. Develop a comprehensive and continual Public Education and Community Outreach program designed to educate and inform the public about the City's Solid Resources programs and strategies.
This is an ongoing activity.

8.0 RENEW LA Plan

In June 2005, Los Angeles City Councilman Greig Smith, Twelfth District, issued a report entitled Recovering Energy, Natural Resources, and Economic Benefit from Waste for Los Angeles (RENEW LA). The report presents a proposed, policy-driven plan for the City of Los Angeles for the 20-year period between 2005 and 2025. The primary goal of this plan, as defined in the RENEW LA report, is “to reduce, reuse, recycle, or conserve the resources now going to disposal to achieve an overall diversion level of 90 percent or more by 2025 and to dispose of only inert residual.”

Although the plan has not been officially adopted by the City, key elements are currently under consideration by the Mayor and City Council with input from BOS. A summary of some of the major programs recommended in this plan is provided below.

8.1 Conversion Technology

The report emphasizes the enhancement and growth of existing public and private sector diversion programs, but recognizes that this will be insufficient to meet the stated goal of achieving a diversion level of 90 percent or more. A key element to meet its goal is the establishment of a system of Conversion Technology (CT) facilities “to process the remaining residual material still going to landfill disposal, and achieving significant additional diversion whether in the form of traditional recyclables, compost, fuels, chemicals, or energy.” Although no specific recommendations with respect to the type of technology that would be used is made in the report, alternatives recommended for consideration included gasification and pyrolysis, anaerobic digestion, mixed solid waste composting, autoclaving and fermentation.

Over the next 20 years, the report recommends phasing in the development of seven regional CT facilities, preferably with at least one located in each of the City’s six refuse collection districts (Harbor, South Los Angeles, Western, North Central, East Valley, and West Valley). A summary of the strategic plan for CT facility development is presented in Table 8.1. At full development, these facilities would have a cumulative capacity of 14,500 tons per day and could generate, depending on the type of technology used, 100 to 340 megawatts (MW) of renewable energy per day.

TABLE 8-1
Strategic Plan
Facility Development Summary
(Initial Plant Construction and Expansions)

CT Plant	Plant Capacity Constructed During Period (TPD)				Total Plant Capacity 2025
	2005-2010	2010-2015	2015-2020	2020-2025	
Plant 1	500	750			1,250
Plant 2	500	750		750	2,000
Plant 3		750	1,500		2,250
Plant 4		750	1,500	750	3,000
Plant 5			1,500		1,500
Plant 6			1,500	1,500	3,000
Plant 7				1,500	1,500
Total Capacity					14,500

Coupled with aggressive source-separation programs and preprocessing at Material-Recovery Facilities (MRFs), the plan envisions an overall diversion of 93 percent by the year 2025, with the remaining waste being disposed at inert disposal facilities. A summary of the RENEW LA diversion targets is presented in Table 8.2.

TABLE 8-2
Resource Management Plan
Zero Waste Target 2025

(TPD) (***)					
Year	Citywide Generation (*)	Existing Diversion Programs (**)	Total New Diversion	Final Disposal Tonnage	Overall Diversion (%)
2005	37,959	23,673	0	14,286	62
2010	41,910	26,137	2,365	13,408	68
2015	46,272	28,857	6,955	10,460	77
2020	51,088	31,861	12,675	6,552	87
2025	56,405	35,177	17,085	4,143	93

(*) Assumes 2 percent growth in each sector per year due to population and commerce increase. Year 2005 based on actual tonnages reported by BOS for 2002 then extrapolated at 2 percent per year to 2025.

(**) Assumes 2 percent growth in existing programs per year.

(***) Assumes 5 days per week.

In addition to diverting waste and converting a portion of the waste stream into renewable energy, other benefits that could be realized, as noted in the plan, include:

- Drastic reduction in truck and rail transportation and their associated air quality and traffic congestion impacts
- Creation of construction jobs and permanent operational “green collar” jobs in preprocessing plants, CT facilities, and remanufacturing operations where beneficial use is made of recovered material
- Conservation of limited, virgin resources
- Significant reduction in environmental impacts from landfills
- Equality in shared system components and responsibilities
- Generation of green, renewable energy

8.2 Economics of the Plan

The RENEW LA Plan estimates that the tipping fees of a new system based on CT facilities will be in the range of \$50/ton, which is considerably higher than current local landfill tipping fees of \$20 to \$30/ton. However, it is noted in the Plan that if true cost/benefit analyses were performed taking into consideration all “externalities,” the cost of CT facilities versus local landfills would be similar, if not cheaper. These externalities include transportation impacts, health impacts, environmental degradation, and resource depletion, (*Costs*); and job creation, renewable fuel and energy, and resource conservation (*Benefits*).

It is further noted in the plan that in the future, CT technology facilities will not be competing with local landfills, which are rapidly filling, but with transfer and long haul by rail or truck to remote landfills. The current estimate by the County Sanitation Districts is that their proposed long-haul rail system will cost approximately \$60/ton (present dollars).

8.3 Policies and Action Items

The RENEW LA Plan presents over 50 new or revised policies and action items for consideration in order to achieve the goal of the Plan. These include policies to provide incentives to increase diversion and penalties to discourage disposal. Key policies and action items recommended for implementation during the first 5 years (2005 to 2010) are listed below.

- Establish a RENEW LA oversight committee
- Adopt the RENEW LA plan and a Zero Waste Policy
- Add food waste to the Green Can program
- Modify the City Zoning Code to allow CT facilities in M-2 and M-3 zones
- Establish site areas for CT facilities in each collection district
- Site and develop the first two CT facilities
- Establish fund from Sunshine Canyon host fees
- Implement recycling in 50 percent of the commercial sector
- Mandate time-certain reduction in City MSW disposed at Sunshine Canyon
- Expand multifamily recycling to 50 percent of the City
- Establish City tax breaks for “zero waste” and new remanufacturing companies
- Establish a green energy producer bonus from the City of Los Angeles Department of Water and Power

8.4 Education and Consensus

To achieve the goal of the RENEW LA Plan, the Plan recommends extensive education, obtaining input from a variety of sources, and consensus building. One of the key recommendations is the use of City Neighborhood Councils. These Councils can “act as focal points and public forums for the successful siting and development of CT facilities and other program components.”

9.0 Agencies Responsible for Solid Waste Management

Solid waste management involves numerous government agencies at the federal, state, regional, county, and city levels. Each agency has a primary area of concern, and some have overlapping concerns.

In general, federal government agencies allow state government agencies to enforce federal laws. State agencies develop laws and regulations that are at least as stringent, if not more, than federal laws and regulations. In turn, state government agencies allow local government agencies, on a regional, county, or city level, to implement and enforce state laws and regulations. Local government agencies develop laws and regulations unique to their areas and suited to their communities. A detailed description of government agencies and their responsibilities is provided in Solid Waste Management Plan Phase I Report, Existing Conditions. These agencies and their responsibilities, updated as applicable from the 1989 report, are summarized below.

9.1 Federal Agencies

Federal regulation of the development and operation of solid waste facilities is set forth in the Resource Conservation and Recovery Act (RCRA) of 1976. This federal authority for regulating solid waste facilities was delegated to the California Integrated Waste Management Board in the early 1990s.

9.2 State/Regional Agencies

9.2.1 California Integrated Waste Management Board

The CIWMB is responsible for developing a state SWMP to comply with federal RCRA requirements. In turn, the state has assigned county health departments in California or other local agencies the responsibility to develop and implement County Integrated Solid Waste Management Plans (CoSWMPs).

The CIWMB designates and oversees the Local Enforcement Agency (LEA), a branch of the city or county health department. LEAs are responsible for the permitting of solid waste facilities. The CIWMB also conducts inspections of compliance with State Minimum Standards for Solid Waste Handling and Disposal.

9.2.2 Los Angeles Regional Water Quality Control Board

In general, the State Water Resources Control Board (SWRCB) maintains the quality of surface water and groundwater in the state. The SWRCB delegates authority for landfill permitting and surface water discharge permitting to the Regional Water Quality Control Boards. The Los Angeles Regional Water Quality Control Board (LARWQCB) regulates

waste discharges to water bodies. Solid waste facilities are permitted through Waste Discharge Requirements (WDRs) by the LARWQCB. WDRs specify the protection and monitoring programs that must be followed to protect water quality.

9.2.3 South Coast Air Quality Management District

The South Coast Air Quality Management District (SCAQMD) is responsible for protecting the air quality in the Los Angeles Basin and preventing further degradation. The SCAQMD is the issuing agency for the Authority to Construct and Permits to Operate landfill gas recovery projects, landfill gas flare stations, landfill gas-to-energy facilities, and WTE plants.

9.2.4 California Highway Patrol

One of the California Highway Patrol responsibilities is to enforce the provisions of the California Vehicle Code and other laws to minimize the loss of life, personal injury, property damage, and prevent crime. This responsibility includes enforcing the safety regulations that apply to the operation of trucks that haul solid resources for the City of Los Angeles.

9.3 County Agencies

9.3.1 Department of Health Services

The County of Los Angeles Department of Health Services is the designated LEA for solid waste facilities within the unincorporated LA County and in cities in the County that are not designated LEAs. The City of Los Angeles Environmental Affairs Department is an designated LEA by the CIWMB as described in Section 9.4.4.

9.3.2 Department of Public Works

The County of Los Angeles DPW prepares, maintains, and administers the CoSWMP. The DPW also maintains the integrity of offsite drainage structures. The DPW is consulted during landfilling activities and upon closure of a solid waste disposal facility.

9.4 City of Los Angeles Agencies

The City of Los Angeles regulates solid waste disposal facilities and practices. Through permits, the City regulates solid waste management, land use and construction, business controls, and industrial wastewater discharges. The City also acts as the Lead Agency for California Environmental Quality Act (CEQA) projects within City limits.

9.4.1 Department of Planning

The Department of Planning issues land use permits and zoning clearances and sometimes serves as the Lead Agency for CEQA projects within City limits. Within the Department of Planning, the Planning Commission and the Zoning Administration have major roles in the permitting of solid waste projects in the City.

Planning Commission

The Planning Commission issues Conditional Use Permits for the operation of a publicly owned solid waste landfill. The Planning Commission approves the use of a lot in a zone if it finds the proposed location to be consistent with the General Plan and desirable to the public.

Zoning Administration

The Zoning Administration Division grants Conditional Use Permits and variances for solid waste projects and for privately owned and operated landfills.

9.4.2 Department of Public Works

Several agencies within the DPW are involved with solid waste facilities. These agencies include the Bureau of Sanitation, Bureau of Engineering, and Bureau of Street Services

Bureau of Sanitation

The BOS provides refuse, recyclables, and yard trimmings collection; sewer and storm drain maintenance and repair; wastewater collection and treatment; and many other related services to the residents of Los Angeles. To accomplish these tasks, the BOS has more than 2,600 employees distributed throughout 16 divisions. An organization chart of the BOS is shown in Figure 9-1.

Bureau of Engineering

The Bureau of Engineering prepares preliminary designs, specifications, and estimates of major public improvement projects. It is responsible for subdivision requirements and checking public improvement plans of private developers. The Bureau of Engineering issues engineering permits, prepares construction cost estimates, and provides construction contract management. It is responsible for Capital Improvement Projects for the City, including stormwater, sewer systems, street, and other infrastructures, including planning and design.

Bureau of Street Services

The Bureau of Street Services collects street sweepings, tree trimmings, weeds, and other debris as part of its operations in the City.

9.4.3 Department of Building and Safety

The Department of Building and Safety issues building permits for projects that involve building structures. Projects include transfer stations, MRFs, WTE facilities that use enclosed buildings for waste processing or product storage, and facilities that use certain types of composting processes.

9.4.4 Environmental Affairs Department

The EAD recommends environmental policies and programs to the Mayor and City Council; implements and coordinates citywide environmental initiatives; facilitates public education; provides assistance to businesses; and ensures that solid waste facilities in the City are operated in a manner that protects the public health, safety, and environment.

In addition to its ongoing work with environmental policy analysis and development, the EAD oversees environmental programs and initiatives, and solid and hazardous waste management, which includes inspecting landfills and enforcing state health and safety laws at solid waste facilities in Los Angeles, and coordinating the restoration of potentially contaminated properties to useful economic purposes (brown fields program).

For the City of Los Angeles, the Environmental Affairs Department (EAD) is an authorized LEA by the CIWMB. EAD has the authority to permit and oversee all types of solid waste facilities, including landfills, transfer stations/processing stations, etc. that are within the City of LA, including facilities owned and operated by the City Department of Public Works.

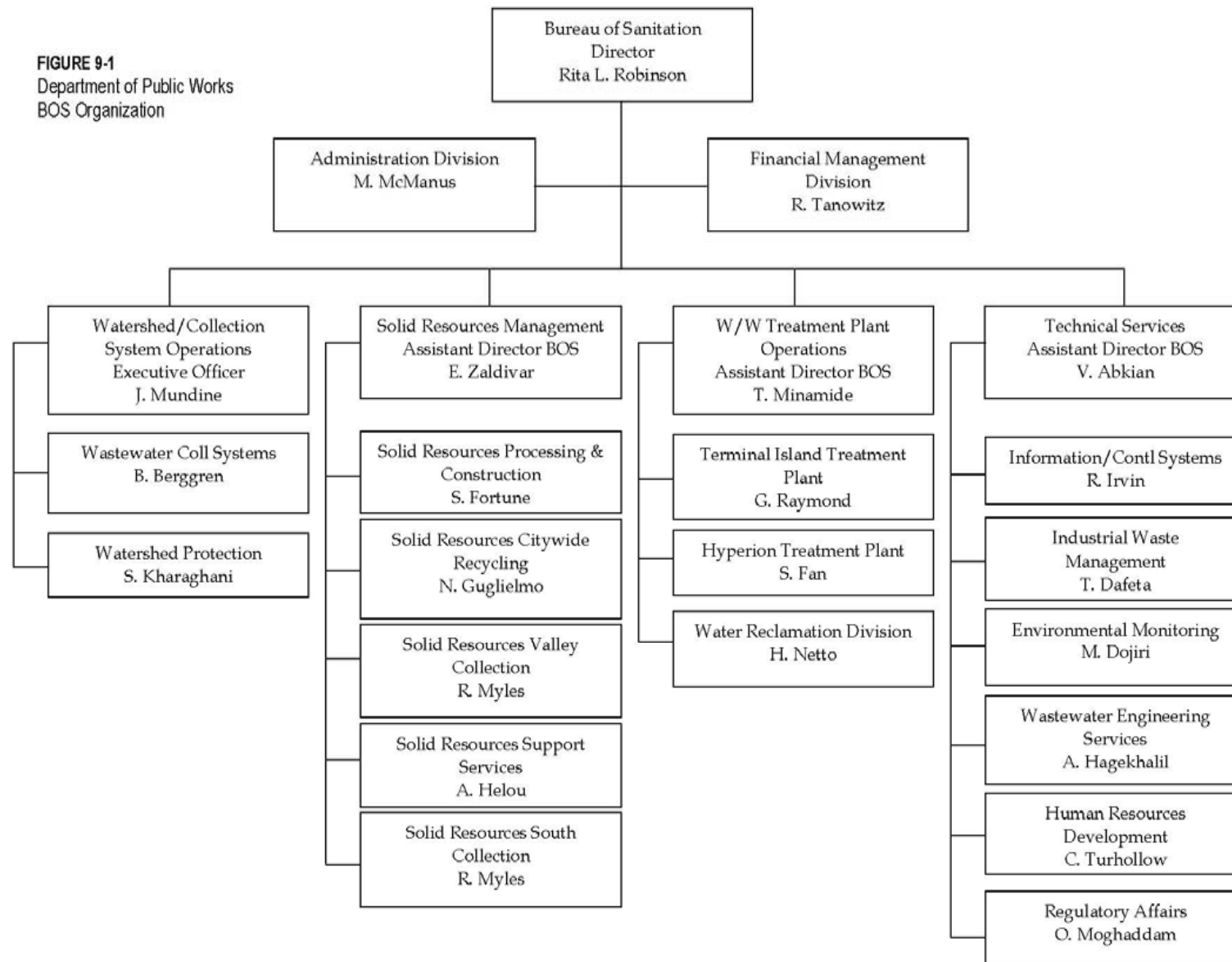
9.4.5 Fire Department

The Fire Department is responsible for reviewing plans for handling hazardous materials and wastes in the City as well as issuing permits for junk yards, including recycling facilities. The Fire Department is also the CUPA for the City's Household Hazardous Waste Program.

9.4.6 City Clerk

The City clerk collects taxes for businesses in the City including businesses relating to solid waste.

FIGURE 9-1
Department of Public Works
BOS Organization



10.0 References

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